

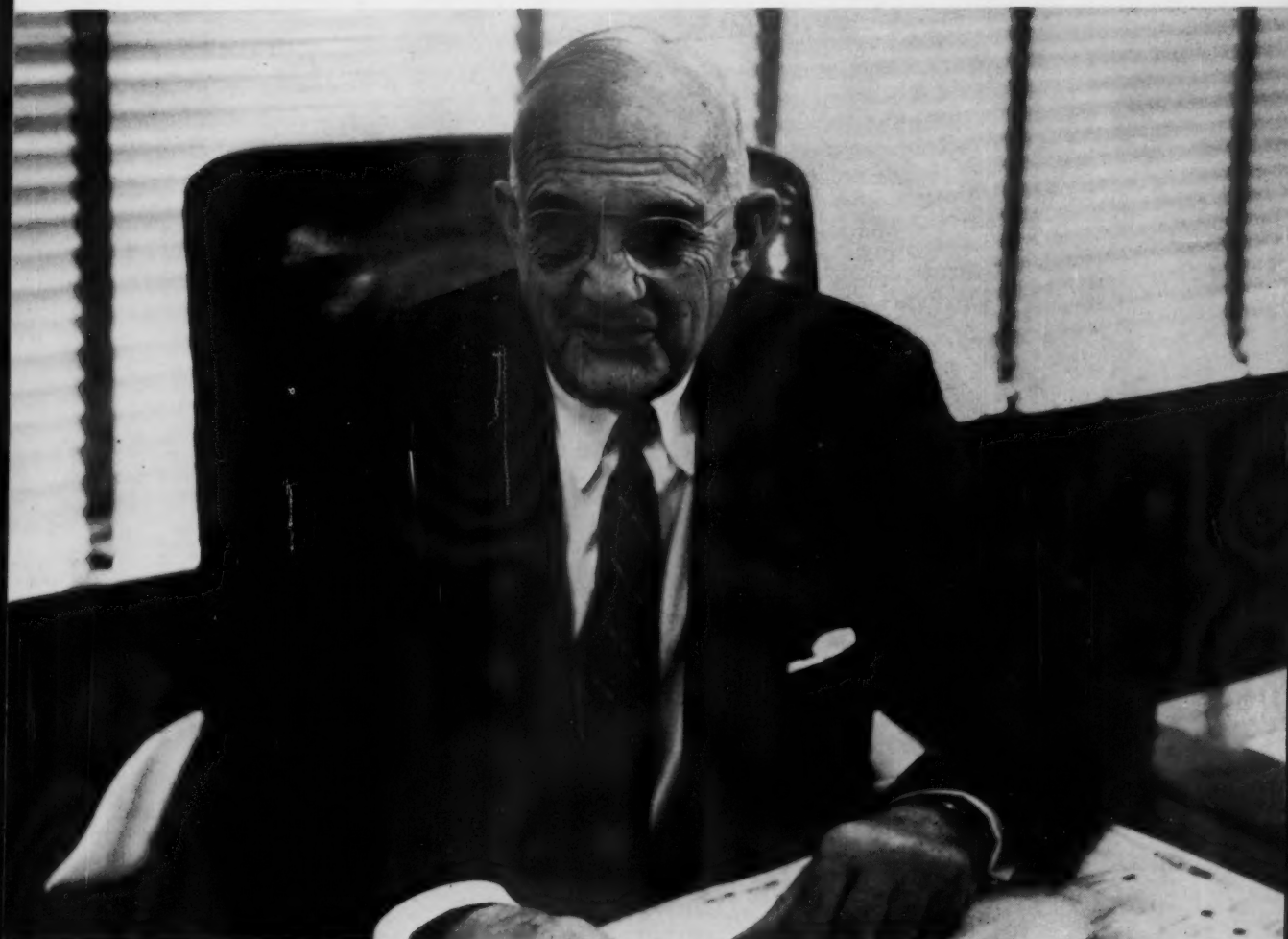
DISTRIBUTION AGE

The Magazine of Physical Distribution

TRANSPORTATION
WAREHOUSING
MATERIALS HANDLING

A CHILTON PUBLICATION

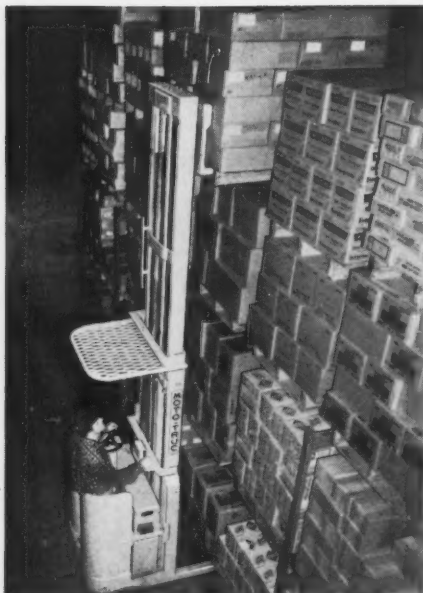
NOVEMBER 1960



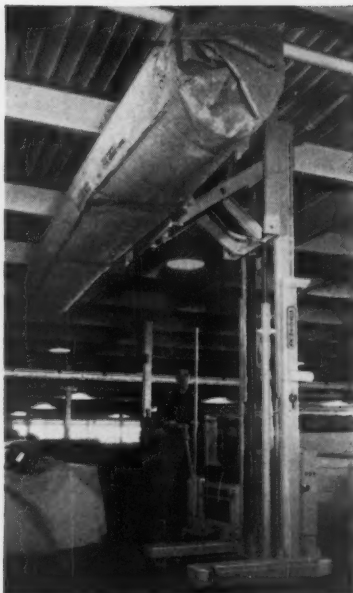
MR. WILSON SAYS 'YES' TO AUTOMATION • p. 29

a multi-stop shipper and afdous • p. 37

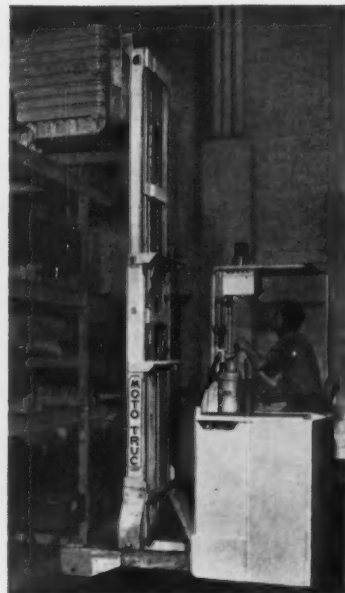
for safe can shipping ... good lading • p. 38



High stacking pallets with a small rider type outrigger truck.



A specialty truck for handling long loads in narrow aisles.



This Moto-Truc Mobile Mast is built for stacking in narrow aisles.



A rider type fork truck makes truck loading fast and easy.



The Moto-Truc walkie pallet truck is used for horizontal handling.

MOTO-TRUC

has the best truck for your job!

Moto-Truc builds just about every kind of walkie and small rider truck you can think of.

No matter which one you pick, you can count on several important advantages. They are priced below competition . . . simply designed to reduce maintenance . . . ruggedly built to give dependable service. Repair parts are interchangeable on all models and are quickly available at low cost.

Experienced material handling men—the ones who keep a close watch on costs—have standardized on Moto-Truc. It will pay you to do it too! Now is the time to write or call for complete details.

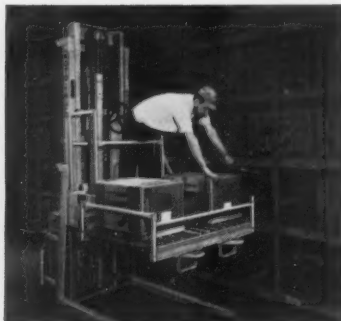


The **MOTO-TRUC** Company

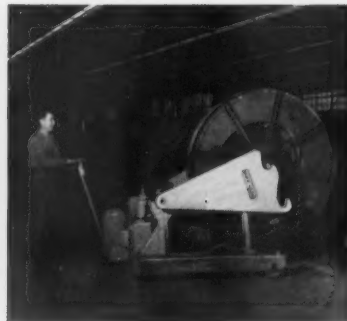
1956 East 59th Street, Cleveland, Ohio



Walkie tractors pull trailers on long hauls. Can be used for order picking too.



The operator rides up with the load on this special outrigger truck.



One of many special models—this one designed to handle cable reels.

Circle No. 1 on Card, Facing Page 52, for more information

Power-packed Pan Am Cargo schedule gives you more speed, more flights, more door-to-door service than any other overseas air cargo carrier... *and at new low rates, too*



Get a taste of this service. You'll like it! For time is just one thing you save when you order shipments by Pan Am Clipper.*

You save paper work, red tape, expensive crating charges, warehousing charges, inventory costs. And as for price—in addition to Pan Am's traditionally low rates to Latin America, transatlantic rates have just been cut up to 45%, transpacific rates were recently cut as much as 53%. Today in more and more cases it costs less to ship by Pan Am than the total for surface transportation.

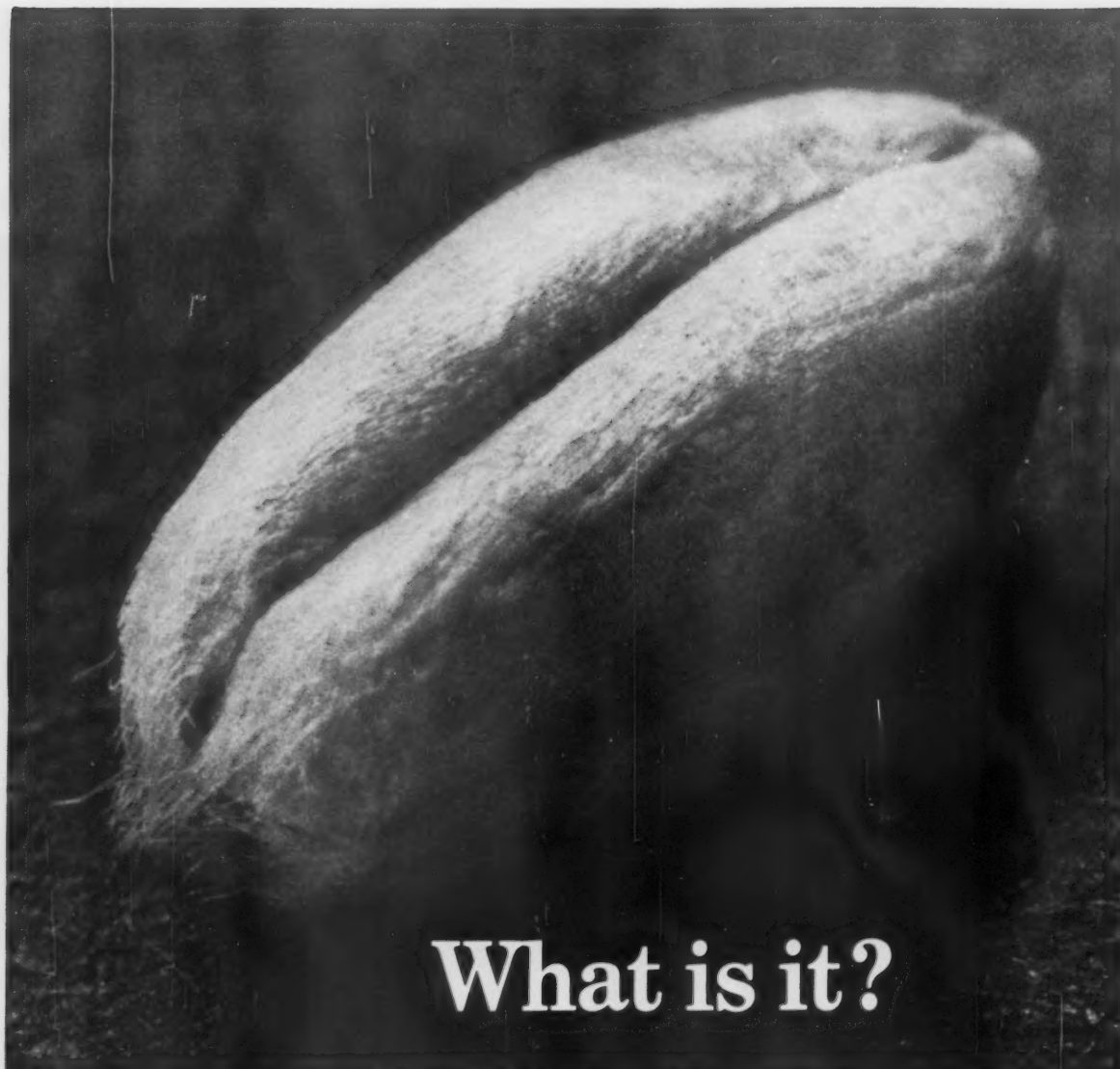
No wonder more American companies now look to Pan Am as their *regular* means of overseas supply. Pan Am offers more: MORE PLANES (including more Jets) • MORE SPACE (new DC-7F's carry up to 15 tons of cargo) • MORE SPEED • MORE FLIGHTS • MORE ARRIVAL AND DEPARTURE POINTS IN THE U.S. • MORE SERVICE.

Your company deserves these advantages on *both* inbound and outbound shipments. Call your cargo agent, freight forwarder or Pan Am office. Get your product *aboard today—abroad tomorrow!*

via the WORLD'S MOST EXPERIENCED AIRLINE



*Trade Mark, Reg. U. S. Pat. Off.



What is it?

A COCOON it's not. And if you guessed a coffee bean, a wad of cotton, or a popover . . . wrong, too. It's something we have a lot of respect for, because we ship trillions of them. It's wheat — a single kernel photographed close up and enlarged 50 times. The point is, no matter what you want to ship — whether measured in millions of bushels or thousands of tons — you can be sure the Rock Island will spare no effort to transport it carefully, quickly, and economically. Modern equipment, electronic traffic controls, automatic classification yards, systemwide teletype and microwave networks, experienced, expert conscientious personnel — all assure that your freight will be handled the way you want it handled.



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...geared to the nation's future*

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NOVEMBER 1960

DISTRIBUTION AGE

The Magazine of Physical Distribution

TRANSPORTATION

WAREHOUSING

MATERIALS HANDLING

Vol. 59, No. 11

NOVEMBER 1960

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***For convenient air freight service,
most jets to the most cities...***

Within a month, four more jets and three more fast DC-7 Cargoliners will join United Air Lines fleet. Jet speed and increased schedule frequency offer you greater flexibility and ease in planning your shipments. Since every United flight carries freight, United offers you nearly 900 sched-



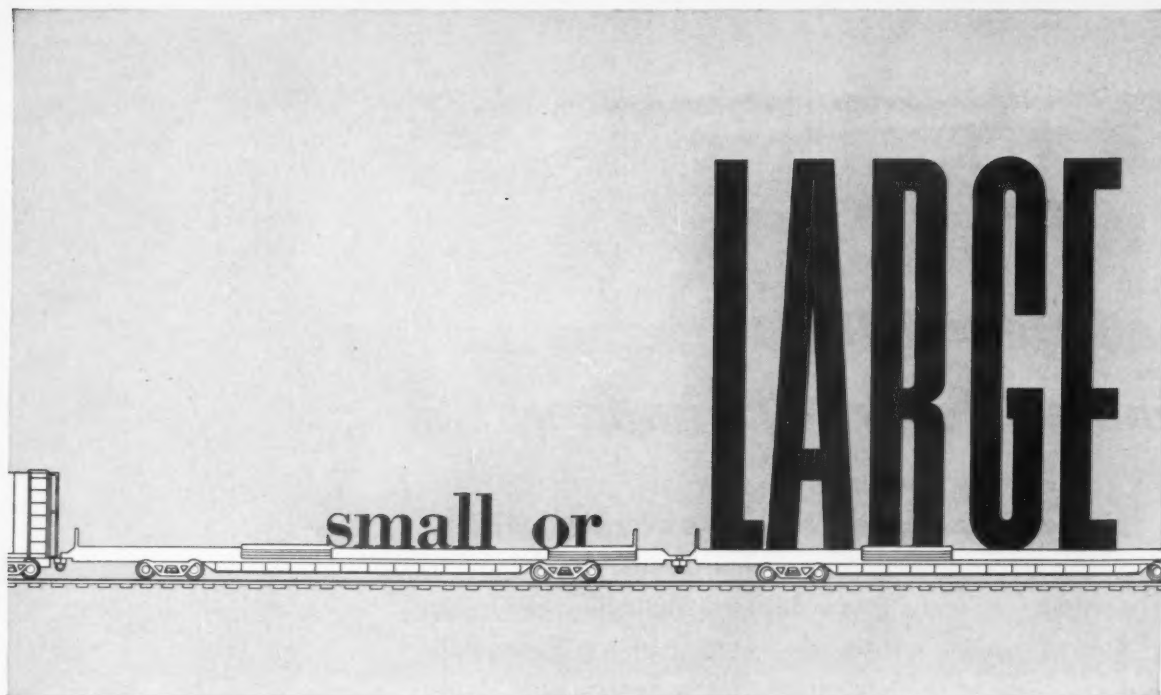
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and still more Cargoliners!**

ules a day, coast to coast, border to border, and to Hawaii. And with United's *extra care* in expediting and handling freight, you gain extra shipping reliability. For your next shipment, call the nearest United Air Lines office.

ALL UNITED MAINLINERS CARRY CARGO

known for extra care





one standard of service!

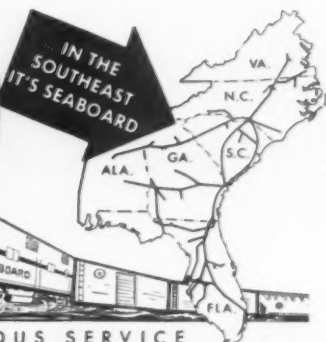
You who ship know the versatility of railroad transportation. No other form of continent-wide shipping offers the facilities to handle the extreme ranges of sizes, weights and bulk which railroads carry as a matter of course.

If you're accustomed to dealing with our road, you've found that *every* shipment is important to us; that we give it the care and attention you want it to have. *Transportation is our business.* That means one high standard of service for *every* type of freight routed S. A. L. —a standard which we are pledged to observe.



Fast, economical piggyback now links major Seaboard points with Northern cities.

SEABOARD
AIR LINE
RAILROAD



THE ROUTE OF COURTEOUS SERVICE

NEWS

7

Chuting the News...

(Continued from Preceding Page)

New NTLS Officers Elected



During the recent Annual Meeting of the National Truck Leasing System a new slate of officers was elected. Shown seated (left to right) are W. C. Warren, Rochester, N. Y., treasurer; Nathan Katzman, New York City, vice president; Frank Max, Jr., Baltimore, Md., president; Hirschel Samit, Montreal, Que., vice president for Canada. Standing (left to right) are Carl Carson, Memphis, Tenn., secretary; members-at-large of Executive Committee: Howard Willett, Jr., Chicago; Robert Bush, St. Louis; R. J. Soulen, Hartford, Conn.; C. L. Baker, Jr., Dallas; and Past President W. Howard Amor, Cleveland, Ohio. Executive Committee member Robert Wilhelm, Portland, Ore., is not shown.

Four States Represented In National Roadeo Champs

Four states shared top honors in the 1960 National Truck Roadeo.

Wisconsin's Leland Hellestad rolled up 421 points to win the straight truck crown. He defeated Leo Ford, of North Carolina, who lost 50 points on the last problem when his truck drifted forward after completion of the problem.

In the first of two runoffs, Walter F. Storm, of Baltimore, defeated John C. Albrecht, of Jersey City, N. J., to earn top honors in the three-axle tractor-trailer class.

The second runoff was in the five-axle tractor-trailer class. The winner was Donald J. Beaudette, of Minneapolis, Minn. Beaudette had tied for first place with Thomas B. Docherty.

Jesse E. Albright, of Baltimore, carried off the top award in the four-axle tractor-trailer class for the second straight year.

Sixty-six drivers, all winners of state titles, participated in the 1960 Roadeo which was held at St. Paul, Minn. The event is sponsored by the American Trucking Association, Inc.

Rail-Labor Unity Urged

A top spokesman for the nation's railroads recently called on rail labor leaders to close ranks with management to end the transportation "public policy mess" in Washington. Daniel P. Loomis, president of the Association of American Railroads, described the present government program as "irrational and unworkable." He made his statement before a joint seminar sponsored by the five train-operating unions and the School of Industrial and Labor Relations at Cornell.

—DA—

Erratum

In the September issue of DISTRIBUTION AGE on Page 23, we published a picture and caption entitled "Videotape Unit Moved." The caption should have read, "When station WSB-TV in Atlanta bought a \$50,000 videotape unit, National Van Lines brought it to the station door." In the original caption we reported in error that Atlas Van Lines moved it.

News Briefs

The New York Central System has opened up a new freight yard. The Big Four Yard will save 24 hours in rail shipments from the Mississippi to the Atlantic Seaboard. This new electronic yard is push-button controlled.

The Union Carbide Plastics Co. will be shipping large containers filled with resins. Over 700 containers are involved in the operation and will be stowed on deck as well as in the ships' holds. The containers holding the resins were manufactured by National Malleable and Steel Castings Co.

A merger has been made by the Utah-Arizona and Arizona Express Divisions of Consolidated Freightways. They will go under the name of CF and will operate out of the present Arizona Express terminal.

KLM Royal Dutch Airlines will send its first DC-7F all-cargo plane full of displays and carrying a traveling live show on a tour of the country. Air cargo experts from Holland, England, Germany, Italy, Switzerland, and France will also be on board. These men will meet with business leaders and the press in the cities to be visited.

A public hearing conducted in Toledo has brought the Toledo-Lucas County Port Authority another step closer to Foreign Trade Zone status. The application was filed by the Port Authority and if granted would make the Port of Toledo the first Great Lakes port to contain such a zone.

Coordinated service will be provided by the Eastern Air Lines and Railway Express. This will deal with air freight and surface express service to and from cities not having airport facilities.

The Rock Island Railroad Board of Directors approved a resolution making a gift of the Rock Island office building, 71st and Stewart Ave., to Goodwill Industries of Chicago. The railroad is transferring its accounting functions being carried on at the Stewart avenue address to a new location at LaSalle and Polk Sts.

The Star System, made up of four freight forwarding companies, Merchants Carloading Co., Inc., Flynn Forwarding Co., Inc., Globe Freight Service, Inc., Hawaiian Freight Forwarders, Ltd., is offering world-wide freight transportation service by truck, rail, ship and plane.

Formation of the world's largest air-truck network will provide expedited freight service between U. S. and South and Central American points. The service will combine facilities of the Pan American World Airways and Ryder System, Inc. The service will employ a single through shipping document and for the first time a single through tariff, eliminating multiple shipping documents and a combination of complex rate structures.

(Please Turn to Page 10)



Automatic Model ELF with Current-Miser Control

Does more work per battery charge than any other electric truck!

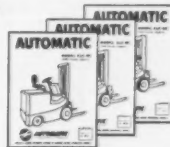


FIRST in Imagination...
FIRST with Reality

Here's the lift truck that gives you even greater economy in battery powered electric lift truck operations—and then some! Thanks to Automatic's exclusive Current Miser Control, Model ELF works up to 60% longer in maneuvering operations per battery charge. Battery power previously lost in maneuvering operations through wire or carbon type resistors is now put to work which means more tons of material moved at less cost.

You'll find Model ELF's high torque characteristics a real plus in climbing up to 15% grades under full load. Its fast travel and lift speeds make it ideal for plant and warehouse operations.

Get the full story on the ELF series of electric trucks in capacities from 3,000 to 10,000 lbs. **Write today for specification bulletins on the ELF series.**



AUTOMATIC AUTOMATIC TRANSPORTATION COMPANY

Division of The Yale and Towne Manufacturing Company

115 W. 87th Street, Dept. WO,
Chicago 20, Illinois

Circle No. 2 on Card, Facing Page 52, for more information

WHEN THIS UNIT IS
DOWN



YOUR COSTS GO



Beat the Problem by
LEASING your
Materials Handling
Equipment from
RYDER

If you're tired of taking a beating on costly "down-time" take a look at the Ryder lease, a real knockout of a solution.

Your capital is released for other needs. All you do is budget one economical monthly lease rate* . . . let Ryder do all the WORRYING about "down-time," obsolescence, and costly repair bills.

It won't cost you anything and it could save you some big money by writing today for the "Full Story" folder from...

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*This rate can cover a complete Ryder leasing package including truck and car rental, if you wish.

Chuting the news . . .

(Continued from Page 8)

F. J. Ryan New AST&T President; Allen Addresses Annual Meeting

The American Society of Traffic and Transportation elected a new slate of officers at its recent 15th Annual Meeting in Cleveland.

Frank J. Ryan, vice president-sales, of Helm's Express, Inc., Pittsburgh, is the new president. He is a past national president of Delta Nu Alpha and past president of the Traffic and Transportation Association of Pittsburgh.

E. F. Hamm, Jr., president of Traffic Service Corp., Washington, D. C., is the new executive vice president. Other officers elected include Vice President Ralph E. Covey, traffic manager, American Sugar Refining Co.; Vice President John A. Keiper, Jr. (Col. USAF); Director of Education Virgil D. Cover, professor of transportation, Syracuse University; General Counsel Frank H. Cutaiar, Mushroom Transportation; and Registrar and Assistant-Secretary Treasurer Henry A. Fahl, Chicago.

Albert P. Heiner, vice president-public relations and traffic, Kaiser Steel Corp., Oakland, Calif., is the new chairman of the Board. Members of the Board, elected to three-year terms, are Peter Badarak, traffic manager, Kramer Brothers Freight Lines; Covey; Hamm; Heiner; William M. Miller, executive vice president, Southern Motor Carriers Rate Conference; Ryan; and L. L. Waters, professor of transportation, Indiana University.

Directors elected to one-year terms are Mendel A. Keith, traffic manager, Columbus Coated Fabrics, and Lawrence Petersen, general traffic manager, Eastern Gas & Fuel Associates.

The following regional vice presidents were elected:

New England—R. J. Sullivan, Boston & Maine Railroad; Trunk Line—Charles C. Collins, National Carloading Corp.; Central Freight—Leonard C. Schmetzer, Thompson Ramo Wooldridge, Inc.; Southern—Walter H. Beard, Southern Railway System; Western Trunk Line—Elliott C. Youngberg, Inland Steel Co.; Southwestern Region—Ernest N. Hensen, Houston Traffic and transportation consultant; South Pacific Region—C. G. Rickenbaugh, Radio Corp. of America. Los Angeles; North Pacific Region—Russell V. Boyle, Brown & Haley Co.; and Canadian Region—William J. Raw, Lever Brothers, Ltd., Toronto.

Coming Events

Nov. 1-3—The MHI Central States Show, The Kentucky Fair and Exposition Center, Louisville, Ky.

Nov. 3-4—American Production & Inventory Control Society, Third Annual National Conference & Technical Exhibit, Sheraton Cadillac Hotel, Detroit.

Nov. 7—National Assn. of Freight Transportation Consultants, Annual Meeting, Chicago, Ill.

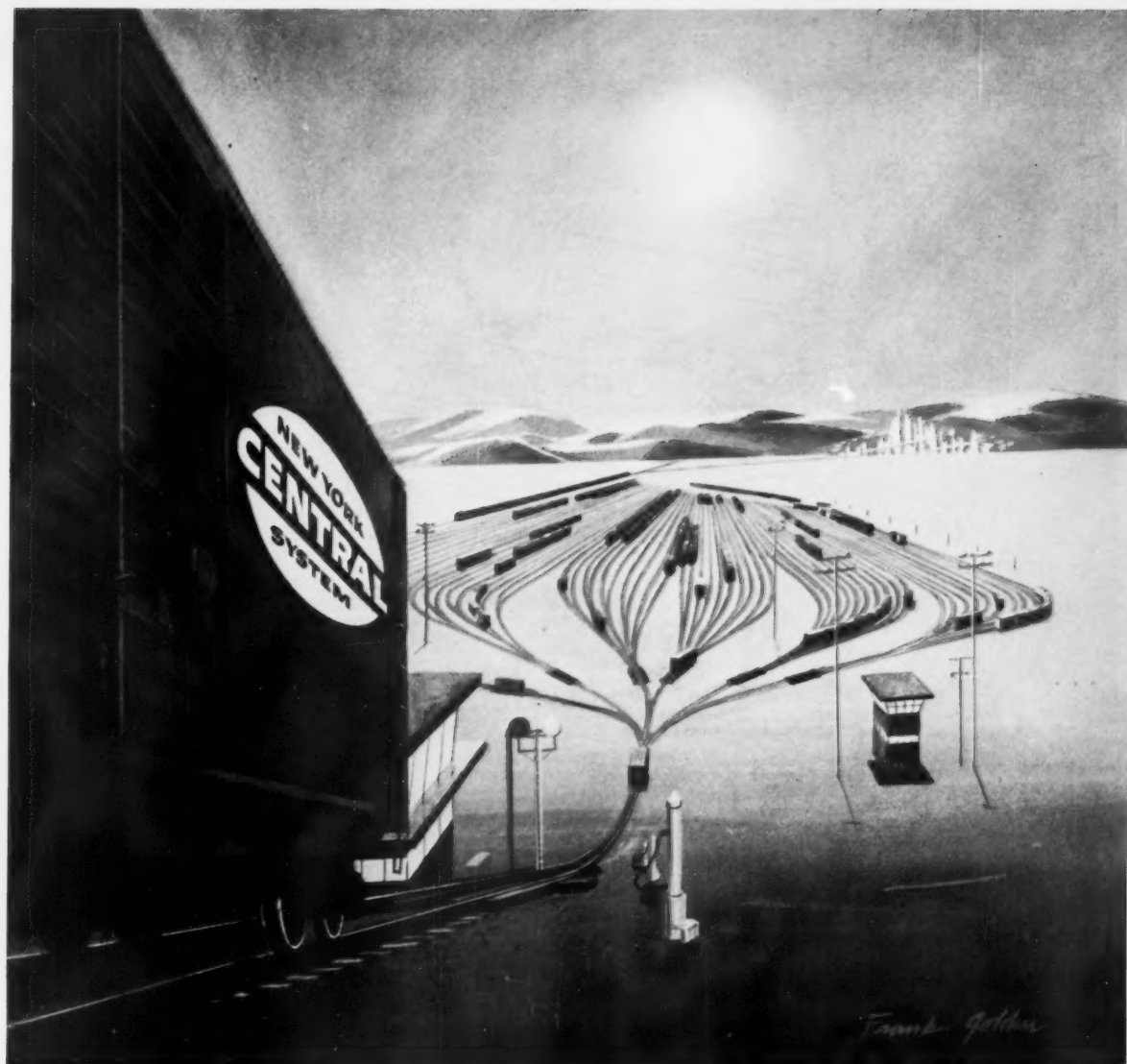
Nov. 7-18—American University, School of Business Administration, 14th Air Transportation Institute, Washington, D. C.

Nov. 14-15—National Wooden Pallet Mfrs. Assn., 4th Annual Wooden Pallet Mfg. & Promotion Clinic, United States Forest Products Laboratory, Madison, Wis.

Erratum

In the October issue's Highway Quick Router, DISTRIBUTION AGE erred in the executives listed for McLean Trucking Co. and its subsidiary, Hayes Freight Lines, Inc. Paul P. Davis is president of McLean Trucking Co., M. C. Benton, Jr., is vice president, treasurer, and chairman of the executive committee. T. W. Andrews is vice president and general manager of Hayes Freight Lines, Inc.

(Please Turn to Page 52)



Announcing | **New York Central's "Big Four Yard"** electronic gateway to growing America

The Central has just opened the most modern freight yard in the world. The Big Four Yard, near Indianapolis, is an all-electronic wonder that classifies and forwards freight faster than ever before.

The Big Four Yard is a strategically located gateway speeding freight in all directions, shrinking the distance between the Central's home territory and the great new growth areas of the South and West.

America's shippers recognize the name "Big Four" as a well-known and respected railroad, now part of the Central system. The Big Four has always been associated with top-notch service and dependability.

The new Big Four Yard, gateway to a growing America, is the fourth electronic yard opened by the Central in five years. Each one does the work of several older-type yards. Each is a milestone along the New York Central, Road to the Future.



ROAD TO THE FUTURE



City to city... or coast to coast... CF maps a complete service

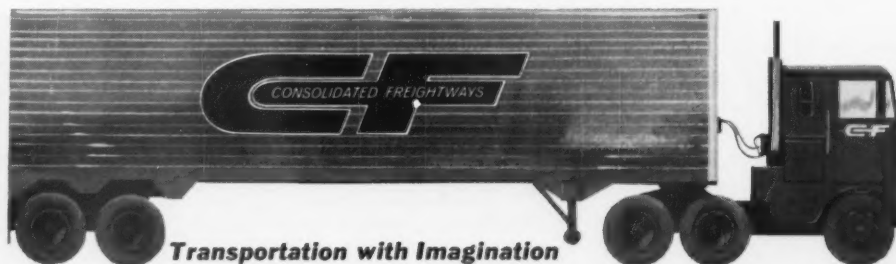
NATION-WIDE COVERAGE—160 company terminals serve nearly every major market in 32 states and 5 provinces of Canada, plus hundreds of smaller communities. Consolidated Freightways International offices overseas assist with import-export traffic. No other motor carrier approaches CF coverage.

CF INFORMATION CENTER—A unique central sales and traffic information service, offering you personal attention on rate studies, traffic and distribution problems, details of CF services.

DAYSaver SCHEDULES—Express "sleeper" service that can save one or more days between hundreds of points. Overnight delivery on all shorter runs. Radio-dispatch in most large cities.

VERSATILITY—The CF fleet includes virtually every type of hauling equipment—vans, flats, open-tops, reefers, lowbeds, tankers, hoppers, containers, collapsible tanks and bins, moving vans, even cranes. You can be sure CF has the right equipment for the job.

Look for us in the
Yellow Pages, or contact the
Consolidated Freightways
Information Center,
Box 32, Chicago 50
Telephone AUstin 7-7003
TWX Bellwood 172



Transportation with Imagination

On the Line—



An Almost Perfect Show

The other day, we attended an exhibition of cargo handling equipment. It was a good show and we enjoyed almost every minute of it.

Before we explain the qualification "almost," these are the two features that we believe made this show a success. First, the exhibits contained much new equipment. Second, the people who manned the booths were, as a whole, very well informed.

Not all shows have both. If we had to choose between them, we would demand No. 2.

The most valid reason for these shows, we think, is the opportunity they provide for users to meet and talk to technical people. It will be years before users reach the full potential of existing handling equipment.

This brings us to our first "almost."

In one booth we asked for technical data. The man we addressed said he was new with the company and couldn't help us. He turned us over to "our star salesman." When the "star" learned that we were not buyers, he handed us some folders and said, "Here read this. You'll get all the answers."

We looked through the folders but the answers were not there. We tried a competitive company and got what we wanted.

This is not the first time that this has happened. So we would like to urge each exhibitor to send his most qualified technical personnel to the booths. Star salesmen, unless company-minded, do more harm than good.

Here's another "almost:" This show had a large variety of special reusable containers. Without exception, all had good possibilities. Sales were being made right and left. Yet, we noticed that the sizes of many of the containers were unusual.

It would appear that the designers had no knowledge of the fact that the American Standards Association has been trying to bring order out of confusion in the matter of container sizes. If ASA standards gain acceptance—and real strides are being made in that direction—then the purchasers of these containers are buying obsolescence.

True, the money will not be completely wasted. Even one year's use—perhaps less—of

these new containers not only will pay for them but also will bring dividends.

However, we suggest that container designers get on the ball and work to ASA standards; and that buyers demand the proposed sizes. Why start with obsolescence?

Old Conductor John

During the recent Pennsylvania Railroad strike, we met a retired conductor whom we had known for years. Naturally, he talked about the strike.

"In all the years that I belonged to our union," he said, "I never head of such negotiations as are going on now. It seems to me that boss Quill is more interested in being another Hoffa than working in the interest of union members."

"In my day, we had free and open talks. Our opinions were solicited. Now, all plans and decisions are made by the bosses."

"But what bothers me most is the attitude of the members. They seem to be brow-beaten. They seem to have lost spirit. I think that they have been sold the idea that the bosses know what is best, and that to question them is disloyal."

"In my time, railroading was a proud career. Today, it's just so many union-protected jobs. In my day, leadership came from within the locals. Today, it is imported."

"I'm told that this fellow Quill came out of New York City's subways. In my day, we wouldn't have associated with his kind."

Today, another John takes out that same train to Philadelphia. Weeks before the strike he told us what was wrong with his railroad: "Management."

Young Conductor John told us many other things that were wrong. We're not quite convinced; mostly because he quotes sections and subsections of union contracts, rather than the kind of customer service language we could understand—the language of Old John.

Old Conductor John was a happy man. It was a pleasure to ride with him. Young John undoubtedly has a better union contract. But we know that he's not happy—nor are the commuters happy with him.

A. B. Greene

EDITOR

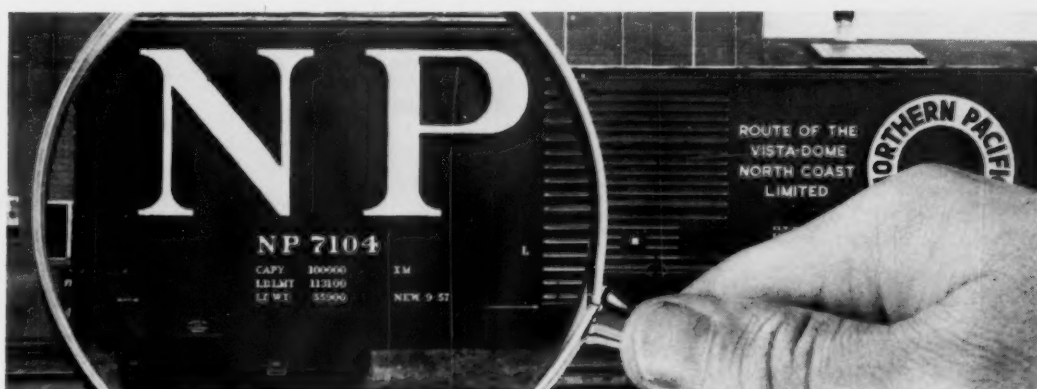
COOL NUMBER!

Workmen at the Pacific Car and Foundry Shops in Renton, Washington are shown insulating one of the 100 mechanical reefers ordered by Northern Pacific this year. Before the year has ended, NP will have added 1,800 cars to its freight fleet—including nine hundred 40-ft. box cars with combination plug and sliding doors and 250 heavily-insulated cars with damage-prevention equipment. It's all part of a continuous program to provide the right car for the need—on NP!



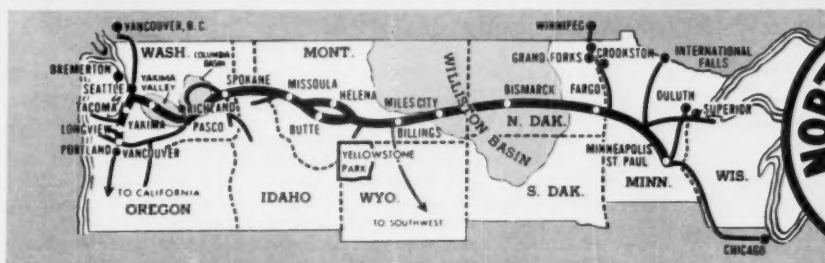
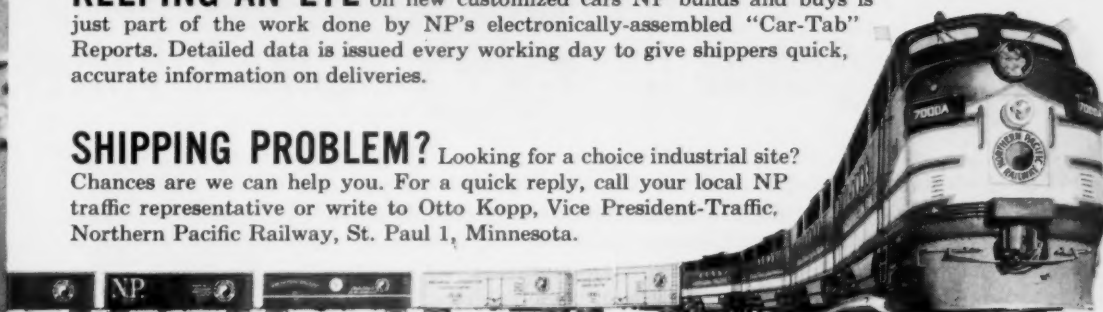


A "PARKING LOT" ON WHEELS helped NP score another first in the movement of new cars by rail. On September 19, 1960, NP picked up the first shipment of automobiles by tri-level transport rack in the Northwest. Studebaker Larks and Hawks made up the load. Eighty-five foot flat cars with tri-level racks will carry 15 compacts or 12 standard-size autos.

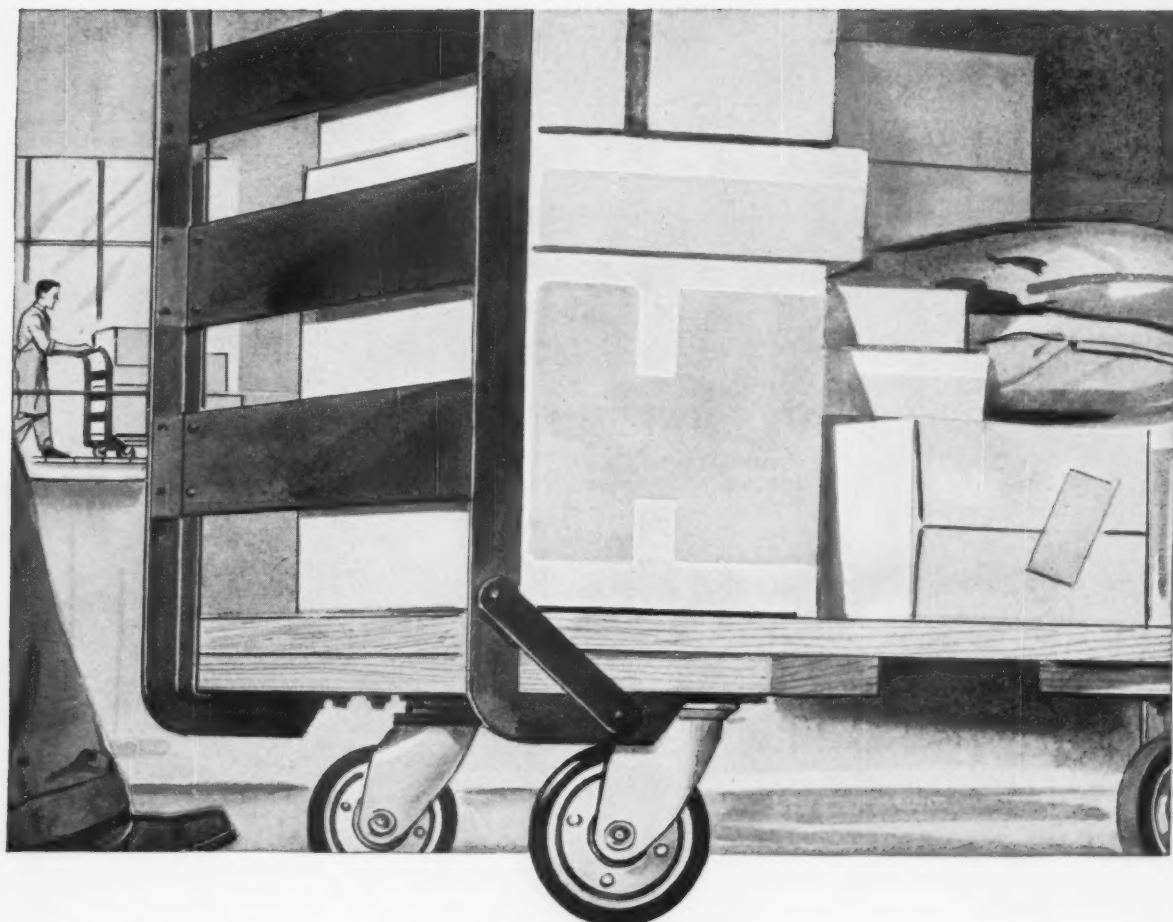


KEEPING AN EYE on new customized cars NP builds and buys is just part of the work done by NP's electronically-assembled "Car-Tab" Reports. Detailed data is issued every working day to give shippers quick, accurate information on deliveries.

SHIPPING PROBLEM? Looking for a choice industrial site? Chances are we can help you. For a quick reply, call your local NP traffic representative or write to Otto Kopp, Vice President-Traffic, Northern Pacific Railway, St. Paul 1, Minnesota.



NORTHERN PACIFIC—really terrific!



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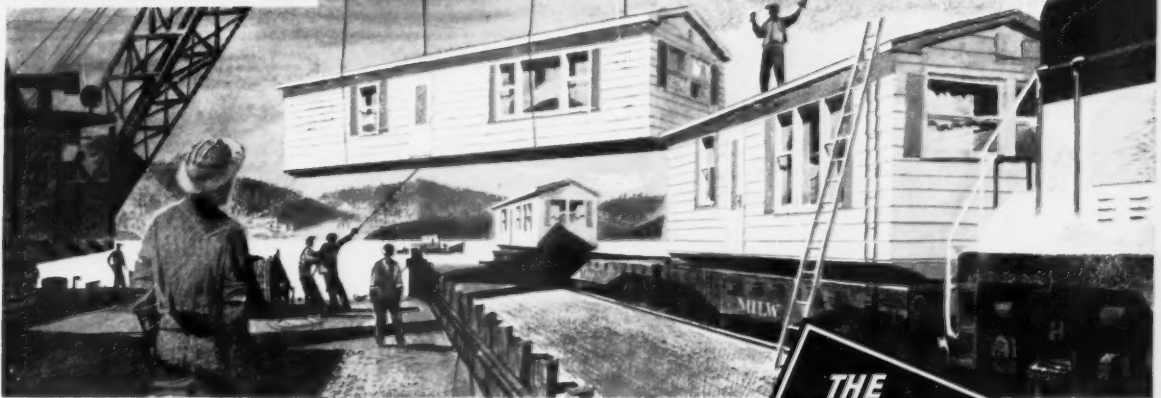
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DISTRIBUTION AGE

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A highly specialized Creative Crew of the Milwaukee Road recently carried out this assignment. The houses were built in two lengthwise sections which can be joined and sealed watertight on delivery. Each section is a flatcar load. Every house is complete to the last square inch of paint, even to modern appliances, curtains and drapes.

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a crack in any of the 84 houses' picture windows!

The Creative Crew involved here is officially our Damage Prevention and Freight Loading Supervision Department. The men in it have special skills vital for the job. By applying their knowledge of bracing materials and methods, for instance, they recently showed a metal sheet manufacturer how to ship bronze coils scratch-free and dispense with costly pallets.

These are further examples of how the Milwaukee Road is building a reputation for resourcefulness. That's why our Creative Crews strive constantly to do *better* the many jobs that railroads do best. And that's why management turns to us when problems demand creative solutions.

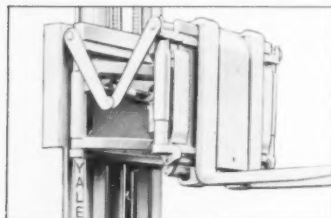
Route of the Super Dome Hiawathas and Western "Cities" Fleet

save space you can't afford to waste

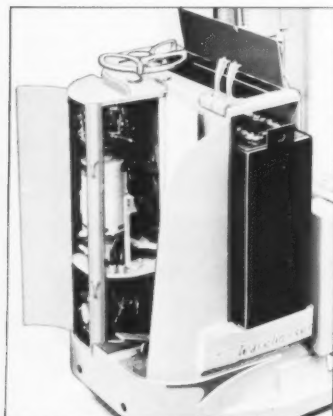
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An exclusive separate motor and hydraulic system in the Extend-A-Load for fork extension and tilt increases efficiency . . . saving power. Unitized design gives maximum maintenance accessibility. Exclusive, interlocking I-beam mast gives greater strength and stability. Mast and carriage ride on large ball-bearing rollers.



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The Yale Extend-A-Load model handles various widths of loads because different size pallets and skid bins can be handled without nesting between outriggers. Maintenance is easier and power is conserved by Yale's exclusive separate power unit for fork extension. Extend-retract device designed for low overall height to prevent robbing you of valuable space in high stacking. Forks can be tilted back to 6 degrees to protect load and speed operations. They can be extended, retracted or tilted at any height of lift. Twin tilt cylinders eliminate sway of forks—provide load stability.

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LETTERS TO THE EDITOR

More Than Cost of Repairs

To The Editor:

We always look forward to reading your articles in *DISTRIBUTION AGE* and in the June issue you dealt with an item concerning more than cost of repairs to merchandise in transit. We lose many thousands of dollars worth of canned goods every year and have never recovered more than the actual manpower cost of reconditioning, shipper's invoice cost of the item, plus any freight involved. This leaves us losing whatever profit we would have made on the sale, together with the additional expense of having to buy more merchandise. In the case of carloads, it frequently distorts the assortment. Since we cannot order another carload we are without certain items that were damaged.

Would you give us opinion and authority as to adding normal profit to our cost? Thank you.

H. M. Hoover
 Manager Operations

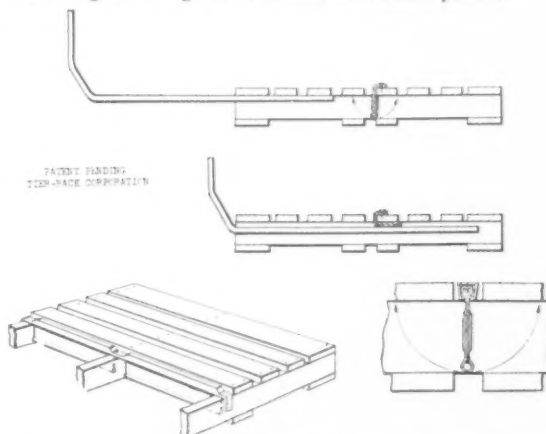
Waples-Platter Co.
 Fort Worth, Tex.

There are numerous more than ordinary legal complications in your case. Hence, I hesitate to give you a positive opinion. However, the rule is pretty well established that a carrier is liable only for replacement value of damaged or destroyed merchandise which can be readily replaced. On the other hand, under certain circumstances the carrier is liable for loss of profits. All these matters must be brought out in testimony.—Leo T. Parker, DA Legal Consultant.

Congratulations!

To The Editor:

We wish to commend you and Mr. D. O. Haynes on the very fine article entitled "Is the Wooden Pallet a Fire Hazard," which appears in the September issue of your fine magazine. Mr. Haynes has done a masterful job of discussing the alleged fire hazard of wooden pallets.

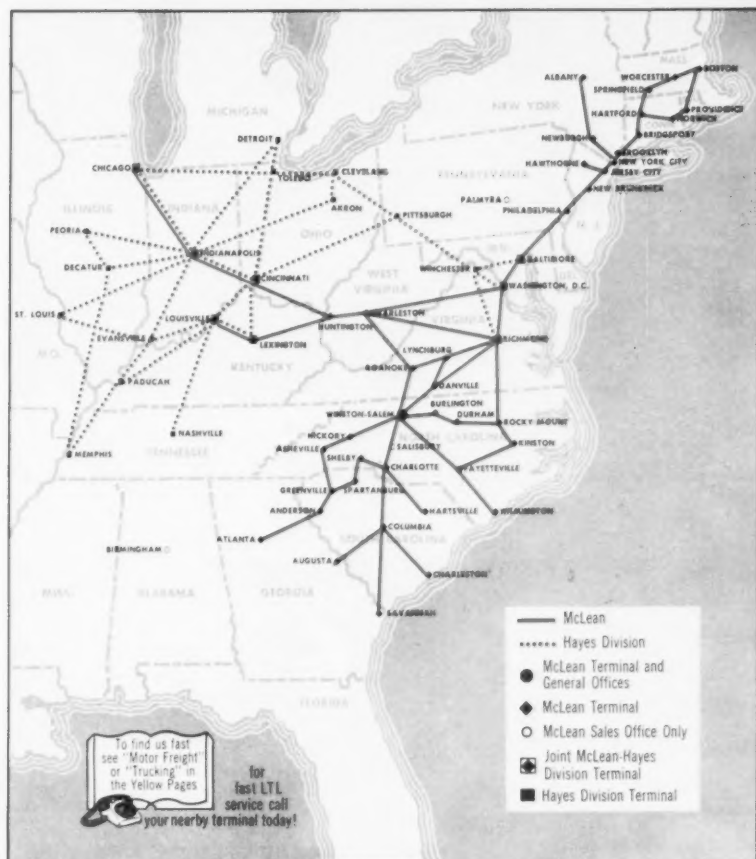


We particularly like your appeal for ideas on how to solve this problem. This Association has spent considerable time and money finding ways and means of firestopping wooden pallets, and we believe that we have found an economical answer. We enclose herewith two rough drawings of similar ideas developed by our members.

William H. Sardo, Jr.
 Executive Vice President

National Wooden Pallet Mfrs. Assn.
 Washington, D. C.

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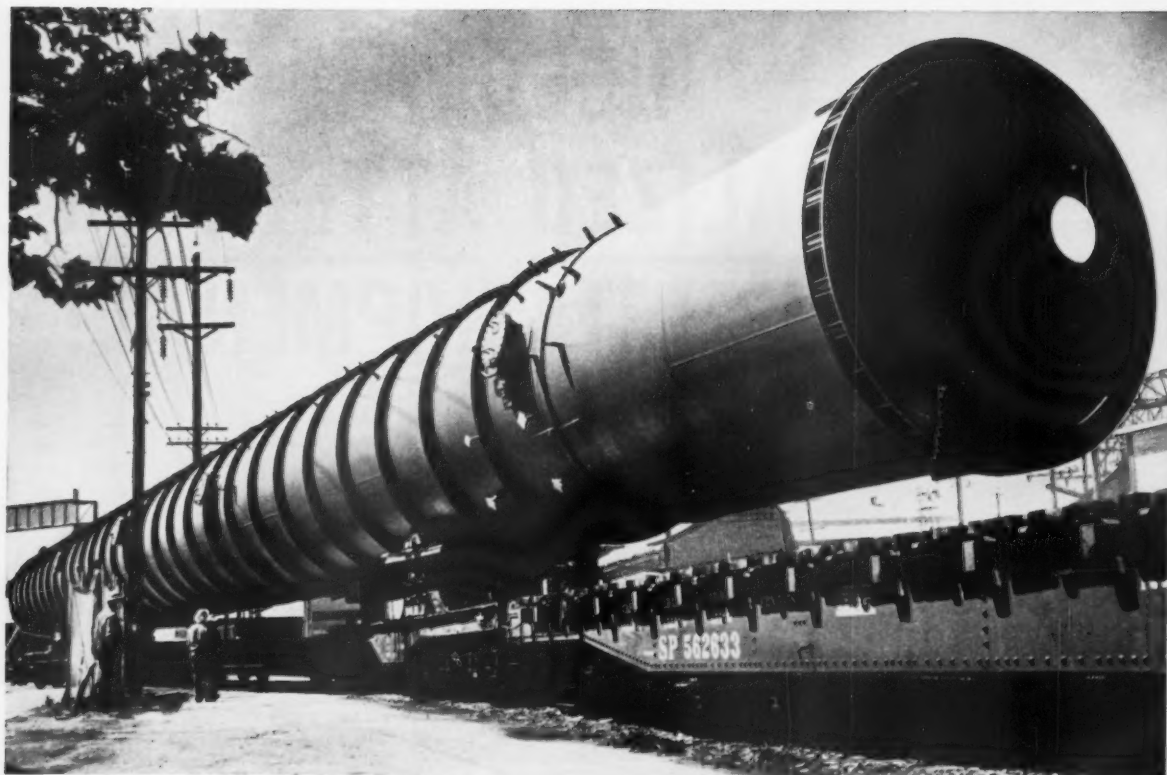
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NOVEMBER 1960

21



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That's why our freight crews in Texas fairly *nursed* this 195-foot deisobutanizer tower along the track from Orange, where it was built by U. S. Steel's American Bridge Division, to Gulf Oil Corporation's new refinery at Port Arthur. Moving only during daylight, they took 17 hours to cover the 44-mile distance.

Hardly a "highball" run. But the pace was right for jockeying this colossal load through populated areas where every clearance had to be checked to the inch.

This kind of skill and planning is what shippers and receivers have come to expect from S.P. for any kind of freight movement... anywhere in the Golden Empire.

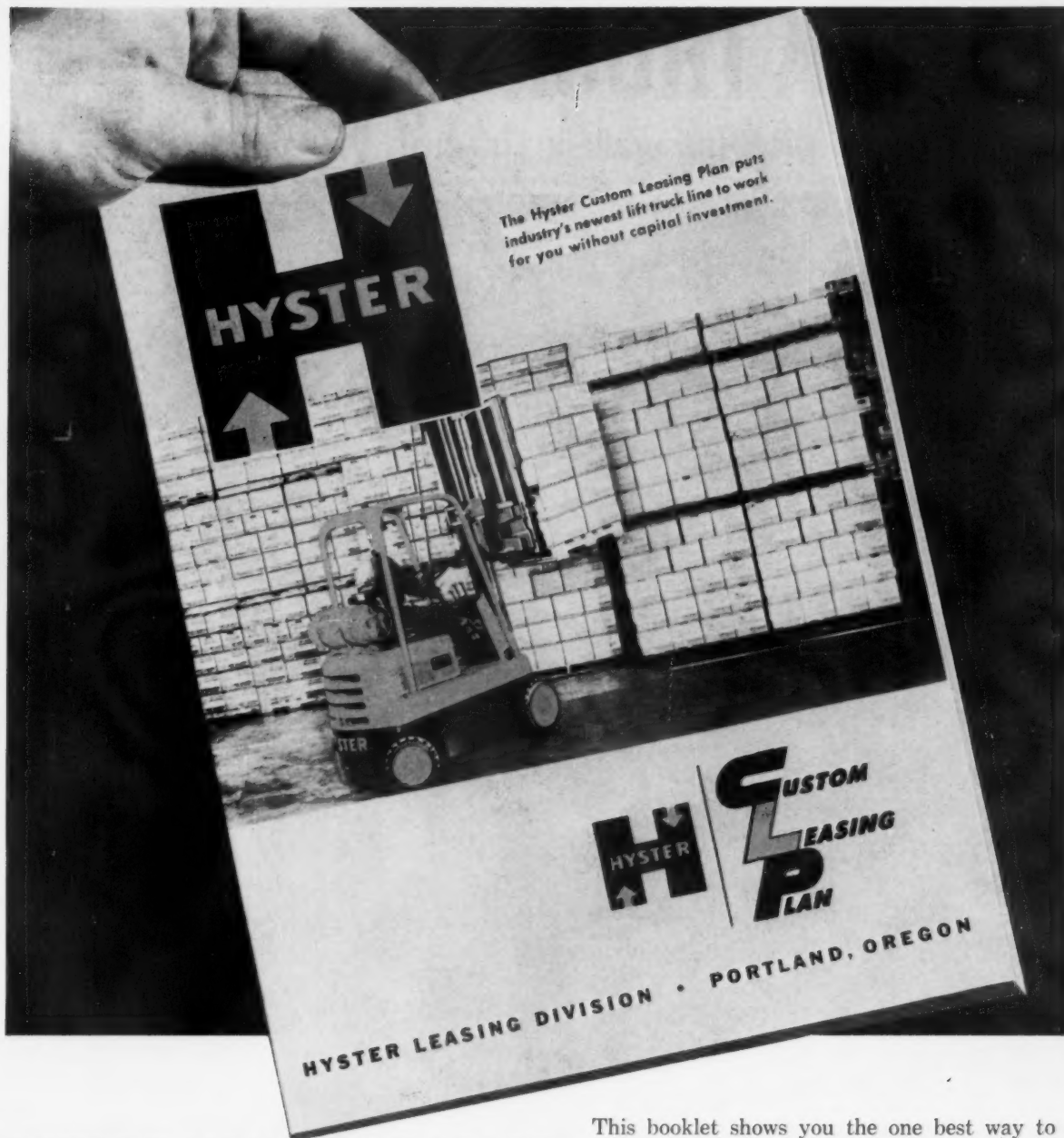


Largest single lift in history of Gulf Oil's Port Arthur refinery followed delivery from Orange by S.P. The huge tower will be used in making high-test aviation gasolines.



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HERTZ
TRUCK RENTAL



WASHINGTON

DA

By Neil R. Regeimbal, *Chilton Washington News Bureau*

TRUCK DEMURRAGE FORECAST—The ICC is likely to approve new truck detention rules for the Middle Atlantic and New England territories. Proposals, drafted by the Middle Atlantic Conference, are supported by the Eastern Industrial Traffic League and in principle by the National Industrial Traffic League. Rules are designed to crack down on shippers who now refuse to pay detention charges and on some truckers who fail to collect them.

MOVING RULES FIRM—Defense Department officials are expected to adopt new rules for distribution of household goods moving business in spite of opposition among some van operators. New rules, which give the military more choice than the present rotating system in placing business, are due to go into effect Dec. 1. The U. S. comptroller general says rules are open to "some question" as possibly causing discrimination or injuring competition. Both Senate Small Business and Armed Services Committees have been getting complaints, but failed to set any hearings or take any action. The Pentagon is now explaining rules to movers in a series of meetings around the country.

FIGHT WATERWAY TOLLS—Barge operators are preparing an allout fight to block waterway tolls. Representatives of the water carriers, shippers, development, and trade associations have formed the National Waterways Conference to "develop and spearhead a program of research and related activities to keep the Nation's waterways free of tolls." The group is concerned over a recommendation by the Commerce Department for a fuel tax, proposals for a User Charge Commission to impose waterways tolls, and a Senate study group expected to recommend tolls.

HIT WATERWAYS REGULATION—A Senate Commerce Subcommittee agrees with charges of water carriers that the ICC has not paid enough attention to water transportation. The Commission has permitted the railroads to engage in practices "discriminatory and prejudicial" to the water carrier industry, the subcommittee charges. It particularly hit present ICC suspension procedures, joint rate and through route policies, and defects in ICC cost data and techniques. Minority (Republican) members of the subcommittee complain they didn't take a hand in writing the report, and that charge merely parrots the water carrier complaints.

EYE TEAMSTER CONTRACT—A new "hot cargo" clause in a recent Teamster Union contract with Eastern truckers will probably touch off some government probes. The clause is a new approach to secondary boycotts—some experts say designed to flaunt the 1958 Landrum-Griffin Labor Reform Act. Unions may seek a test court case of the clause. National Labor Relations Board could rule on it if a complaint is brought when the clause is put into effect during a dispute. Racket-probing chairman of the Senate Investigations Subcommittee, Sen. John L. McClellan, D., Ark., has asked his staff to "look into" the contract.

SHIPPER RULES COMING—New rules clarifying conditions under which a shippers association may operate and avoid government regulation as freight forwarders are expected to be set by the ICC. Forwarders complain that many shippers' associations are performing their functions under the guise of exempt associations. An examiner in a test case says solicitation, advertising, entertainment of members, and commissions for securing memberships or traffic are outside normal association activities, showing a forwarder-type operation. Service to the general public thus is created, he says.

AGENCY REFORM GAINS—Everybody is getting into the move to push reforms in the government's regulatory agencies, of which the ICC is one. President Eisenhower has appointed a special study commission under a federal appeals court judge. Sen. Warren Magunson's Commerce Committee is planning hearings. The ICC finally was pulled into the scandal hunt by the probing House Commerce Committee. Its chairman, Rep. Oren Harris, D., Ark., charged "possible corruption" in the ICC administration of trucking regulations—which the agency denies.

RAIL MERGERS EXPECTED—The ICC approval of the Erie-Lackawanna Railroad merger—the largest rail merger approved in recent years—will intensify the efforts of other roads to solve their economic problems through combination, government transportation experts agree. In giving the green light, the ICC found "incorrect and untenable" a claim by the unions that the new line could not lay off workers of either line for four years. The agency noted that preserving "unneeded" jobs would destroy the cost-cutting purpose of the merger.

(Please Turn to Page 91)



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Men in the News

Traffic—

Tyrus C. Stewart—appointed traffic manager, Monsanto Chemical Co., Lion Oil Co. Division, El Dorado, Ark.



Howard L. Frisbie (above right)—appointed manager, United States Gypsum Company's Western Traffic Department at Los Angeles, Calif. **Walter A. Wise** (above left)—appointed traffic representative.

Maj. Everett Robertson, Jr.—promoted to lieutenant colonel. He heads the Staff Transportation Plans Office, Directorate of Policy and Plans, MTMA, Washington, D. C.

Richard E. Spatz—new assistant manager, Traffic and Transportation Department, Koppers Co., Inc.



William E. Allen—named traffic manager for Milwaukee Crane Division, Novo Industrial Corp., Cudahy, Wis.

Hardy G. Ross—heads the purchasing and traffic division, Western Electric Co., New York, N. Y.

Transportation—Highway

William Doyle Beatenbough—appointed director of traffic, Ryder Truck Lines. **Raymond H. Mathisen**—named assistant to Castle W. Jordan, general counsel and secretary, Ryder System, Inc., Miami, Fla.

O. M. Collet (left)—elected executive vice president, Pacific Intermountain Express, Oakland, Calif. **W. T. Cannon**—manager Bulk Commodities division.



C. F. Zeebuth—appointed director of sales and traffic, Bulk Commodities Division, Pacific Intermountain Express, Oakland, Calif. **R. L. Thomas**—named bulk operations supervisor at San Pablo.

Alfred D. Schiavino—new manager, Branch Motor Express Co. terminal at Baltimore.

Roy Hall—named vice-president in charge of marketing, Leyland Motors (U.S.A.) Inc., New York City.

Sankey Unger, Jr.—named vice president in charge of sales, Yankee Lines, Inc., Akron, Ohio.



Thomas C. Farrell—general sales manager, Mercury Motor Freight Lines, Inc., St. Paul, Minn.



Albert E. Greene—appointed general manager, New York division of Inter State Express, Inc., New York City.

—Rail

H. Russell Platt III—new manager tank car sales; **George A. Chmelik**—named manager, tank car service; and **Miss Edna Sitts**, supervisor, tank car service, North American Car Corp., Chicago, Ill.

Joseph N. Wolf—named assistant vice president sales, Western Carloading Co., Los Angeles, Calif.



Harvard R. Osmond—elected vice-president, Coal Traffic, Chicago & Eastern Illinois Railroad Co. **Richard E. Miller**—assistant vice-president, Coal Traffic, Chicago, Ill.

Materials Handling—

P. W. Perdriau—named president Industrial Products Co., B. F. Goodrich, Akron, Ohio.

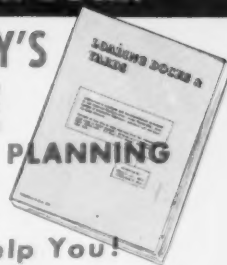
Will Mitchell, Jr.—appointed acting director, Research Division, Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

Edward A. Puchalski—named sales manager, Milwaukee Crane, a division of Novo Industrial Corp., Milwaukee, Wis.

Jack B. Trussell—named sales manager for materials handling, Minneapolis Moline, Hopkins, Minn.

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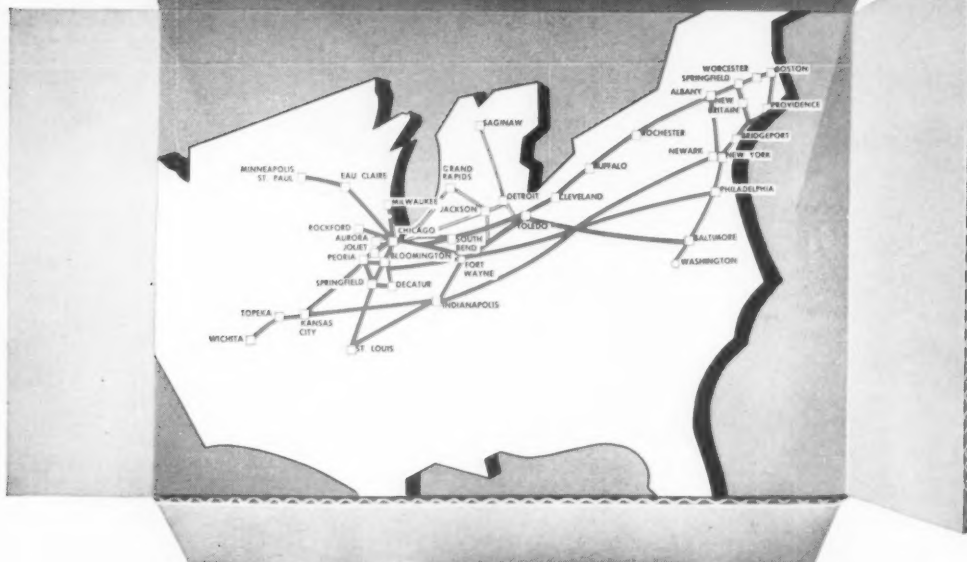
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By Horace W. Wilson
President,
Quaker City Cold Storage Co.,
Philadelphia, Pa.



NOVEMBER 1960 . . VOL. 59, No. 11

IS AUTOMATION feasible in public warehouses and to what extent? I think it is in certain cases. This is how I arrived at this conclusion. First, let me say that my thoughts are based on study and observation and are from a warehouseman's viewpoint.

About ten years ago, Philadelphia started to talk about downtown rehabilitation and the building of two expressways. As our largest warehouse, which has in excess of 2,000,000 cu ft, is in this area and could conceivably be condemned, we started to think of its replacement. The size and kind of a new building and the type of equipment which would best meet present-day requirements were considered. We started to look into the possible use of automatic devices.

Change of Service

Needless to say customers' requirements in the metropolitan areas have changed materially from that of storage to distribution. We used to handle possibly 30 major commodities in large lots and store them for long periods. We're now handling hundreds of items and in very small lots and for fairly prompt delivery. With the growth of the chain stores and the competition this has brought on, producers and processors have been forced to reduce their prices. This, in many cases, has necessitated the building of warehouses at the points of origin. The chains themselves have also built new warehouses. Of course they have built to meet present-day needs in the hope that they, too, can operate more cheaply.

So, the question is: Can we stay in business unless we reduce our costs; can this be done with automation; is it feasible; and, also, can we afford it? We are presently using fork lifts and pallets in all our buildings.

For years, we have been reading articles in trade journals describ-

Mr. Wilson says 'Yes' to automation

Yes, automation is feasible for public warehouses in their new roles of distribution centers, this executive in the cold storage industry says. But . . .

ing automation as used by manufacturers and distributors. But to the best of my knowledge, this, has only been applied where large quantities of the same items are handled consistently and at predetermined rates. I have yet to learn of anyone in public warehousing who has gone into this. By automation, I mean push-button operation by which records are kept and materials stored and delivered.

We early realized that we would have to have two systems. One would cover the clerical work. An-

other would produce the physical handling of the materials. However, we doubted that the buildings we operate could readily be converted for automation. They run from five- to twelve-stories with central elevators from 2500 to 6000 lb capacity. All are bounded by city streets. We decided we would have to forget automated handling, at least for the time being, and experiment with the then modern methods for clerical work.

So, in 1946, we installed a complete set of data processing equipment. We made a list of every conceivable item which we expected to store. Each item was given a code number. We then gradually worked our entire system over, so that all our clerical work was handled with the machines. This enabled us to discontinue the posting of stock ledgers. We were able to do the billing in a couple of days. Inventories and government reports could be compiled in a few minutes. We were enabled to set up a complete cost system and compile data on the in-and-out movement of practically everything we handled, whether in large or small lots, and built up some very useful figures.

(Please Turn to Page 53)



This article was excerpted from a speech delivered by Wilson before the National Association of Refrigerated Warehouses of the Canadian Warehousemen's Association. CWA President Frank Kenwood is pictured above

Temperature profile of frozen food distribution

■ The importance of maintaining low temperatures to preserve the quality of frozen foods has received widespread publicity recently. The result of this may be to give the impression that this high-quality service is not now being performed.

Therefore, we may be approaching a new goal of low-temperature control without realizing where we stand today. The University of Massachusetts, in cooperation with the Frozen Food Distributors Association of New England, recently surveyed temperature control and handling efficiency in eight selected wholesale firms.

The primary purpose of the survey was "to determine the effect of operational procedures and equipment on the temperature of frozen foods while in storage and at time of delivery, and on the ability of the membership to comply with requirements of the state code relative to the storage and distribution of frozen foods."

Described on these pages is the survey and its conclusions. The material was originally presented at the joint meeting of the Executive Committee of the Frozen Food Distributors Association of New England by George A. Michael, director, Division of Food and Drugs.—The Editor

THE EVIDENCE suggests that satisfactory temperature control can be achieved by a majority of firms if recommended handling practices are employed. In most cases, the need for major changes in equipment is not indicated.

The study uncovered widespread temperature control problems. Many distributors were not aware of the temperature of incoming merchandise. They relied on the antiquated concept that "if hard and cold" the merchandise is acceptable. In most cases, distributors did not take product temperatures. Many did not possess

The University of Massachusetts recently studied the temperature of frozen foods during distribution. In its report, it says that adequate control is possible

*University of Massachusetts Report**

thermometers capable of measuring product temperature.

This is how the test was conducted. Firms were selected to provide a geographical and operational cross-section of distributors in the state. The tests took place in April, May, and June.

The distributors selected had a wide divergence in methods of operation. Some firms handled only frozen foods. In this group, some depended mainly on institutional trade while others had very little of this type of business. Most handled groceries and non-food items in addition to frozen foods. In some cases, frozen foods were handled by a separate department with its own sales force and delivery trucks. In others, distributors treated the various frozen products as grocery items for which their regular sales forces took orders. Deliveries were made with other groceries.

The physical movement of frozen foods from receiving at the warehouse to delivery at institutions and stores was studied. Order processing methods were observed. Air and product temperature measurements were obtained during handling operations such as unloading, storage, order assembly, loading, and delivery.

Product temperatures were mea-

sured with an unbreakable, stainless steel dial thermometer. Thermometers were tested for accuracy before, during, and after the survey. The type of equipment, handling operations, and temperature data observed are summarized in Tables 1 and 2.

Observations

Average weekly gross sales of all merchandise for these firms ranged from \$15,000 to \$360,000. Comparable figures for frozen food sales varied from \$10,000 to \$92,500. Sales of frozen foods to institutions, reported as a percentage of the weekly average for these foods, ranged from zero to 100 per cent. The average percentage of institutional sales for all distributors was about 20.

The smallest number of accounts handled was 60. This figure was reported for a distributor who had handled frozen foods for only a short time. The most accounts handled by one company was 2000. Most of the companies serviced between 200 and 500 accounts.

With differences in operational methods, there were wide variations in office procedure. However, all but three distributors used electronic data processing. Where this was available, tub files were used to keep a running inventory.

The other establishments took physical inventories monthly or

*Collaborating members were: T. F. Midura, R. M. Vondell, F. M. Sawyer, K. M. Hayes, T. W. Leed, E. L. Hayes.

TABLE 1: Observations of Equipment and Handling Methods

	No. of Distributors
1. Employee training and duties	
a. Employee solely responsible for frozen foods	5
b. Employees given handling instructions	6
2. Receiving operations	
a. Equipment for delivery to distributors	
1. Truck	
a. Refrigerated	8
b. Dry	3
2. Rail	
a. Mechanical refrigeration	5
b. Ice and brine cooling	3
b. Method of unloading	
1. Roller conveyor	0
2. Platform skids	4
3. Pallets	4
c. Frequency of product temperature measurement	
1. Usually	2
2. Occasionally	1
3. Never	5
3. Storage operation	
a. Type of warehouse	
1. Private	4
2. Public	4
a. Distributor has control of temperature	4
b. Distributor contract specifies 0° F.	1
b. Maintenance of adequate air circulation	6
c. Maintenance of 0° F.	7
d. Freezer equipped with power failure warning system	3
e. Rotation practiced	4
f. Items stocked according to product groups	4
g. Stacking method and equipment	
1. Pallets	1
2. Hand-stacking	2
3. Combination of (1) and (2)	5
4. Bins for loose items	2
h. Order assembly location	
1. Freezer	7
2. Platform	1
4. Delivery operation and equipment	
a. Loaded by	
1. Skids	4
2. Roller conveyor	2
3. Hand	1
b. Orders loaded in order of delivery	8

**TABLE 2: Temperature Data
Average Product Temperature (°F.)
at First and Last Delivery**

Truck Refrigeration Equipment	Weather	Temperature First Delivery	Temperature Last Delivery	Temperature Change	Comments
Hold-over plates	Cool, dry	6	11	+5	
Remote (compressor off drive shaft)	Hot, humid	15	21	+6	Mixed load
Self-contained unit	Hot, dry	3	8	+5	
Shipping containers with dry ice	Cool, dry	6	7	+1	
Insulated truck	Hot, humid	26	20	-6	Mechanical failure in warehouse freezer
Insulated truck with dry ice	Hot, humid	19	23	+4	Mechanical failure in warehouse freezer

**Product Temperature at Time of Delivery
(Based on 63 Measurements)**

Temperature, °F.	Number of Observations
Below 0	0
0 to 5	14
6 to 10	24
11 to 20	17
Above 20	8
Median Temperature, 9° F.	

Average Temperature of Incoming Shipments

Rail delivery	0° F.
Truck delivery	9° F.

quarterly. Usually, they had some method of their own for keeping an account of stocks of fast moving items. Adjustments to inventory were made daily, weekly, or as needed, depending upon the facilities of the plant and the seasonal availability of the product.

Most orders are received from salesmen or by telephone from customers. The record then is used by the computer clerks in pulling the cards in the tub file to make up the order. All establishments do some cash-and-carry business. Most of them, however, discourage such a practice.

Account numbers are assigned to each customer. In one instance, the account number also indicated the location of the customer in the delivery pattern. This is a relatively simple way to facilitate the routing and loading of trucks. With the accounts numbered in rotation by location, the trucks can be loaded to capacity.

Then, when the first one is full, the next order will go into the second truck without interrupting the delivery sequence. This system wouldn't work where definite routes are established and distributors have set up a schedule so that one driver delivers to certain stores on certain days.

Route Deliveries

Where distributors had definite routes, the number varied from six to 25. The average stops per route ranged from 18 to 50. Mileage of these routes varies greatly according to size and type of area. But, in general, estimates of the maximum daily travel per truck were about 100 miles.

Location usually is the determining factor in routing orders. However, occasionally, the size of the order enters the picture. While some of the distributors have orders tentatively grouped for routing

before they are sent to the warehouse, the warehouse manager has the final say in this matter. Usually, the orders are processed as they come in so that, by the end of the day, they can be grouped and sent to the warehouse.

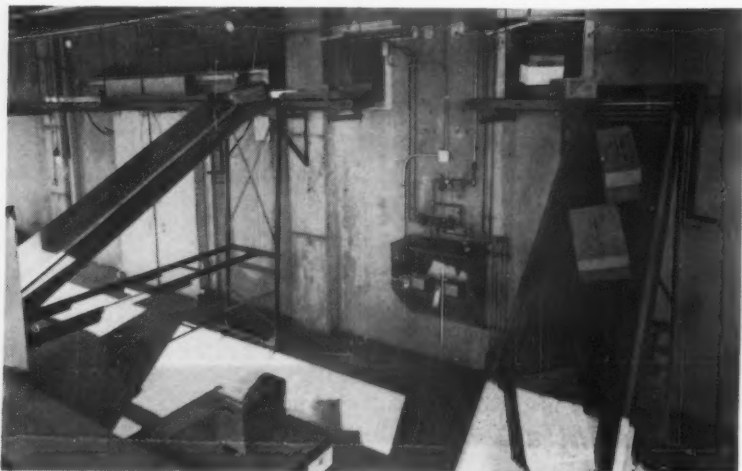
Outside of the metropolitan area in which they are located, most distributors plan on not over two deliveries per customer per week. Two of those visited, however, had no restrictions on the number of deliveries. One of these had no minimum on the size of the order.

All the others had minimum requirements which varied from \$10 per order to \$150 per week and from six to 10 cases. The higher limits usually were required by the distributors who made their frozen food deliveries in separate trucks.

In most cases, employees were
(Please Turn to Page 58)

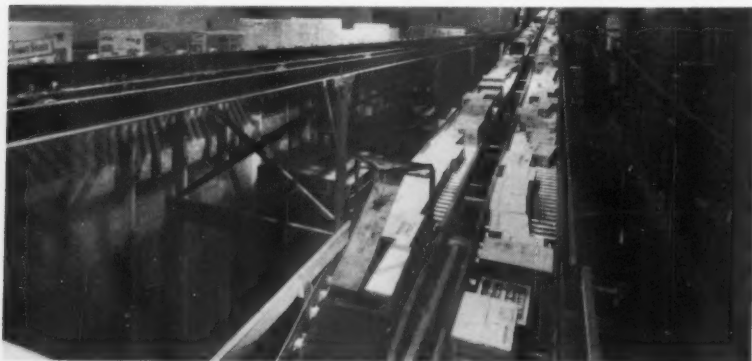


Fork lift places palletized load on rollers so stocker at right can make use of the load in feeding flow lines



Cartons of food products flow down the portable chutes into waiting delivery trucks. Telescopic conveyors help speed the center's truck loading operation

Surge conveyors, pictured here, can accumulate as many as 600 cases at a time. Designed by Matthews Conveyor Co., it keeps orders in delivery route sequence



Subzero

A SUBZERO distribution center, one of the most fully automated facilities of its kind, was recently placed in operation by Jerseymaid Milk Products Co., Los Angeles.

The building is leased from Union Ice Co., whose next door plant provides pipeline refrigeration. It replaces an older warehouse which Jerseymaid occupied for nine years.

Its 750,000 cu ft of subzero space includes all of the room the company now requires. Here is stored enough food products to meet the needs of retail outlets for a period of two or three months. In addition there is an order-filling system which occupies about a third of the area.

Non-refrigerated portions of the center include a dispatch office, driver office space, locker rooms, and a truck dock.

The dock is unusual. It has connections which permit the refrigeration of trailers with ammonia-filled plates as well as with butane-operated transicold units.

Among other innovations are six view windows. Each is made up of three layers of Thermopane. This makes it possible for supervisory personnel to observe work being done in the refrigerated area without exposing themselves to the cold.

At the receiving end of the dock, which is large enough to accommodate 14 40-ft trailers, merchandise comes in on evenly-loaded pallets. This is due to a controlled ordering system, which makes it unnecessary to keep a large number of partly-loaded pallets in the storage area.

Some merchandise also is received at the rear of the building,



warehouse fills orders from punched cards

Merchandise is released from 120 automatic flow lines and discharged to four collecting belts on its way to surge lines in this warehouse.

The surge conveyors permit the simultaneous loading of several trucks

where a spur provides room for eight boxcars.

In the subzero storage area, stacking irons are used in order to assure the maximal use of space. Since each pallet carries about 85 cases and has a standardized height of 5 ft, each stack is normally four pallets high.

Temperatures maintained in both storage and order-filling areas are continually within the -5 to -10 deg F range.

Merchandise is transferred from the storage area to automatic lines in the order-filling area by fork lifts. These fork-lift trucks place loaded pallets on roller conveyors, which make it possible for a stocker to move any pallet load to a desired location.

Items Stored

Jerseymaid stocks more than 350 different food products. These must be delivered in quantities ranging from one to several hundred cases. An unusual surge-accumulation conveyor setup is used to assure the fast and efficient transfer of ordered merchandise in proper route delivery sequence to refrigerated delivery trucks. This system was specially designed. It has a number of features whose advantages should justify their extensive usage in other warehouses in the future.

The surge-accumulation feature of the system is such that mer-

chandise is released from 120 automatic flow lines. They discharge to four collecting belt conveyors which converge into two lines. The two lines are, in turn, combined at a final converger. Here a manual selection discharge belt joins the automatic system items after which an automatically controlled diverter directs each order to one of two reciprocating gravity surge conveyors.

Because they can accumulate as many as 600 cases at a time, the surge conveyors permit the simultaneous loading of two or more trucks. During the loading process, metering belts regulate the flow to overhead dock conveyor belts. A photocell-counting mechanism prints the total number of cases for each order.

Truck Loading

The flow of merchandise to truck loading stations on the dock is controlled by diverters. Trucks are subsequently loaded by means of portable chutes and telescopic conveyors.

To make sure all orders will be properly refrigerated until they reach their destination, truck drivers are expected to make daily use of thermometers in their respective racks.

In making deliveries, drivers receive order forms which they bring back to the distribution center

each day. After being checked by route supervisors for correct routing and customer order numbers, these standardized forms are sent to an electronic data processing station.

There, key punch operators transfer order data to commodity cards. In this way the information can be transmitted by a card reader to four separate memory units. Then relays can control the solenoid-actuated escapements which regulate the release of cases from the automatic flow lines.

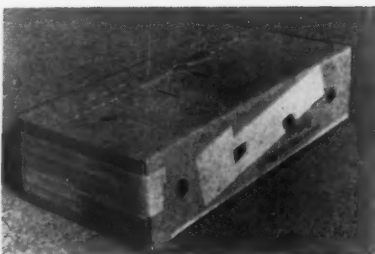
Simultaneous output from four different levels is also provided for by the memory units. A built-in sequencing control minimizes the possibility of case interference on collecting conveyors.

Breakdowns

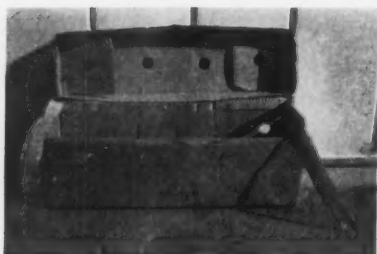
In the event of a failure of either mechanical equipment or controls, operations are automatically halted. It is not always possible to tell whether stoppages are due to non-usage, or to the malfunctioning of equipment, without making visual inspections. To eliminate this inconvenience, Jerseymaid officials are currently contemplating installing a closed-circuit television system which will permit the complete inspection of automated handling facilities whenever necessary by a man in the dispatch office. ●



Window carton with recessed bottom. Bottom is filled, then stapled in



Fireboard master container is used for film-covered paperboard trays



Dotted line on box in left picture shows tear tape. Above box is opened

Produce packing for storage and

Cabbage, celery, lettuce, tomatoes, and grapes are covered in recent

THE U. S. Department of Agriculture, in an effort to assure consumers top quality in farm products, carries on studies to develop improved shipping containers and methods.

Two recent projects of the USDA's Agricultural Marketing Service, have resulted in improved distribution of two groups of products. For the Navy, the USDA studied storage methods for cabbage, celery, lettuce, and tomatoes. This work was done by the Market Quality Research Division.

The second study covered pre-packaging California grapes at the shipping point. It was undertaken by the Transportation and Facilities Research Division.

Cabbage, Celery

In the storage methods tests, cabbage, celery, and lettuce, packaged in various ways, were stored at 32, 38, and 45 deg F. The objective was to determine the optimum method of handling each vegetable to assure it maximum storage life.

Tomatoes, ripened and unripened, were stored at various temperatures to determine the best method of maintaining quality and lengthening storage life.

The results were about the same

when the vegetables were stored in sealed, unperforated plastic crate liners or individual bags, and when they were stored in unsealed perforated liners and bags. Because of this, and because produce may be damaged by changes of atmosphere which occur in unperforated containers, it is suggested that only perforated or unsealed liners and bags be used for celery, etc.

Cabbage kept about equally well at 32 or 38 deg F for periods up to six weeks. But it kept slightly better at 32 deg for longer periods. It deteriorated most rapidly at 45 deg. In this case its condition was only fair after four weeks' storage.

Weight loss of cabbage stored in unlined crates increased with the length of the storage period. It ranged from 5 per cent of the original weight after three or four weeks at 32 deg to 13.7 per cent after seven or eight weeks at 45.

This loss, principally by evaporation, was accompanied by moderate to severe wilting. The use of perforated or unperforated polyethylene crate liners for cabbage reduced weight loss for the same periods to less than 1 per cent. Cabbage losses due to discoloration, decay, and breakage were usually less in polyethylene-lined than in unlined crates. Green color in fresh

cabbage was retained for longer periods in polyethylene-lined than in unlined crates.

Celery kept considerably longer at 32 deg than at 38 or 45. When stored in unlined crates, celery wilted badly at all temperatures. When stored in polyethylene-lined crates or in individual polyethylene bags, there was no wilting. Losses due to discoloration, decay, and broken leafstalks were usually less than when stored in unlined crates.

Lettuce retained good quality for considerably longer periods at 32 deg than at 38 or 45. It kept as well for four weeks at 32 as it did for two weeks at 38 deg. Similarly, it was still as good after six weeks at 32 deg as after only two weeks at 45.

Weight losses of up to 11 per cent occurred in lettuce stored in unlined crates. Losses in polyethylene-lined crates, in contrast, never exceeded 1 per cent. Individual parchment wraps reduced weight loss in stored lettuce but not as effectively as packaging in polyethylene bags. More lettuce remained edible in polyethylene-lined than in unlined crates. This was due principally to the reduction of weight loss.

Removing wrapper leaves from



One worker continuously checks the weight of the filled grape packages

shipping

USDA reports

lettuce before storage proved to be the most practical method for holding the greatest amount of edible lettuce per unit of weight and space.

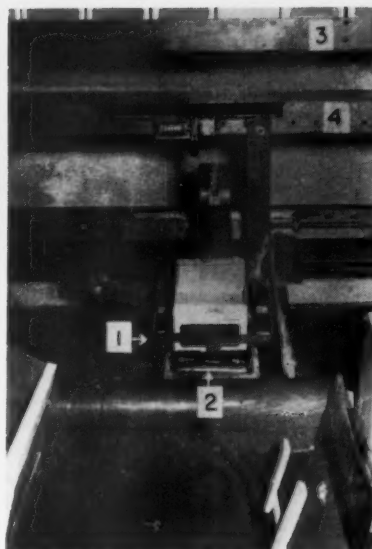
Mature-green tomatoes stored directly at 38 deg failed to ripen properly. They became injured by the low temperature and developed extensive alternaria rot.

Mature-green tomatoes ripened slowly at 48 deg and developed less decay than tomatoes showing some color. All of the sound fruits were edible but none ripened sufficiently at 48 deg to be of good quality.

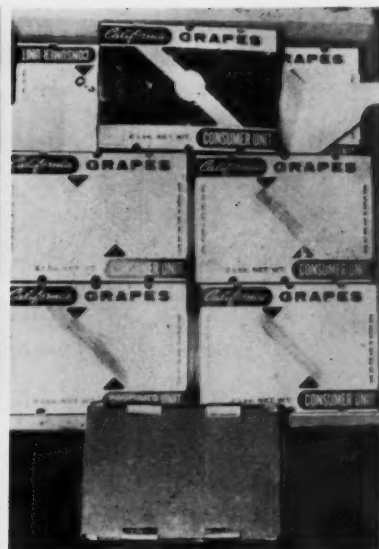
Tomatoes ripened at 55 or 65 deg kept better at 32 than at 38 deg. However, the slow ripening at 55 followed by storage at 32 and 38 produced extensive decay. Tomatoes ripened at 65 and stored at 32 and 38 kept satisfactorily for about three weeks.

The most successful method for extending the storage life of tomatoes was to ripen mature-green fruits at a moderate rate at 58 deg. Then they were stored at 32-35 deg.

Free copies of this complete report—"Cabbage, Celery, Lettuce, and Tomatoes, Laboratory Tests of Storage Methods," Marketing Research Report 402—are available. They may be obtained from the Of-



Grape packing stand: Form (1) holds carton on scale (2). Top belt (3) brings empties; (4) carries load



Window carton having self-locking bottom. Four in center have windows covered. Bottom one is upside down



The effect of polyethylene bags on the wilting of celery is shown here

fice of Information, USDA, Washington 25, D. C.

Prepackaged Grapes

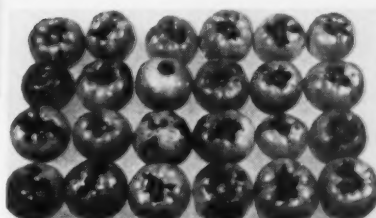
In the second study, the USDA found that grapes can be prepackaged in California and successfully shipped to eastern markets. Grape growers and packers received premium prices for prepackaged grapes in recent trial shipment. Packaging costs were, however, greater.

Prepackaged grapes arrived in eastern markets in better condition than similar grapes shipped in bulk boxes.

The usual premium charged was



Lettuce before and after removing wrapper leaves showing trim removed



Mature-green tomatoes stored at 38 deg for 21 days then at 65 for five days. All developed alternaria rot

50 cents per shipping container of prepackaged grapes. This increase represented the added cost of packaging—47 cents for bulk packing in a wood box as compared to 94 cents to \$1.08 for the new package.

The prepackaged grapes arrived at the market with less than 1½ per cent damage. Bulk-packed grapes had a 2.3 per cent damage rate. Also, the consumer packages adequately protected the grapes in (Please Turn to Page 60)

What is this thing called freeze-drying?

Freeze-drying, a new contender in the food preservation field, is now being set up on a production scale. Here is how it operates

A QUIET revolution may be about to take place in the food-preservation field.

You may ask, "Is irradiation here?" The answer is "No, at least not on a production scale."

The change that is near at hand is the introduction on a large scale of the freeze-drying method.

Within the past year, several leading food-processors have test-marketed a variety of foods prepared by vacuum freeze-drying. These include shrimp, coffee, instant soup mixes, steak, chicken,

mushrooms, corn, and green vegetables like celery.

Not just in the test stage, the freeze-drying process is being handled by production-scale equipment. More units are nearing completion.

John F. Maguire, product manager, Stokes' Vacuum Processing Equipment Department, F. J. Stokes Corp., delivered a paper on this method at a recent symposium.

Vacuum freeze-drying removes the moisture from the food prod-

uct under high vacuum conditions, with only a gentle amount of heat required. The resulting product can be stored indefinitely—for years—without refrigeration. It is so much lighter in weight than frozen or canned products that it can be shipped economically to anywhere in the world.

These two savings—in refrigeration equipment and in transportation costs—more than compensate for the slightly higher processing cost, according to Maguire.

Even this cost is coming down, according to Maguire. At present, he said, a Stokes plant designed for tonnage production can remove a pound of water for four or five cents. This cost includes labor, power, and heat plus the amortization of equipment over a ten year period. Studies are now underway to improve the methods and equipment so that the cost on many items can be cut to 2½ or 3½ cents per pound.

The company has been working closely for several years with a number of major food companies and research organizations, perfecting the processing techniques for a wide range of food products and planning large-scale operations. From this experience has come layouts that can process between five and ten tons of food per hour.

"Turnkey" Operation

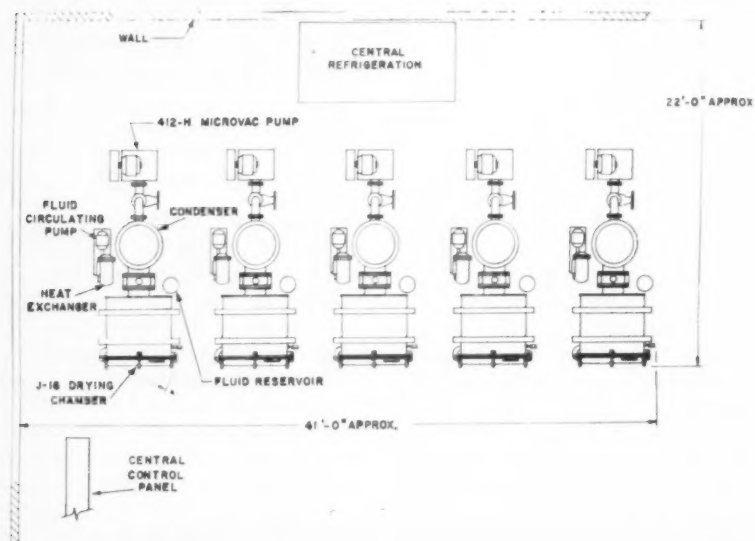
Freeze-drying plants are designed for complete "turnkey" operations. Handling, processing, and packaging operations are closely linked with the freeze-drying units.

Stokes pioneered in the development of the vacuum freeze-drying process in the U. S. more than 25 years ago. It was initially applied to the preparation of anti-biotics. Later it played a major role in the blood-plasma program.

Since World War II, it has extended into the fields of vaccines and serums.

It's introduction to the food-processing industry, the manufacturer said, has brought a preserving method which retains the color, shape, taste, and texture of the original. Only the water is removed. ●

Floor layout of five-chamber vacuum freeze-drying plant with a capacity of two tons of food per day. Designed by F. J. Stokes Corp., it is actual installation



Multi-stop trucker meets AFDOUS challenge

Flapper doors half way back in truck keep temperatures low for products to be delivered in the afternoon even in summer weather

By James J. Gallery

President, James J. Gallery, Inc.

THE story of frozen foods in 1960 would not be complete without mention of the AFDOUS Code. In 1961 the story will be the effort of the distribution industry to perfect the products and methods needed to maintain AFDOUS goals.

In the requirement of transporting and storing frozen foods at 0 deg F or below, no one is harder hit than the multi-stop trucker.

Already operating on close margins, they must now add the expense of maintaining zero temperatures during frequent unloading operations.

In Massachusetts, first state to adopt the code, one of the carriers who can meet the standard is James J. Gallery, Inc. This is the story of the Gallery operation.

James J. Gallery, Inc., is a common carrier in the state of Massachusetts and a contract carrier to points in Rhode Island, New Hampshire and Maine. The company specializes in ltl shipments of frozen foods to all these points.

About 40 million lb of frozen foods and ice cream are received, stored, broken down, and delivered

to retail stores each year. Each truck makes from eight to 25 deliveries per day with shipments ranging from 200 to 3000 lb per stop.

For many years this company operated holdover plate trucks. They had 6 in. of insulation and one two-horsepower compressor refrigerating approximately 12,000 sq in. of plate surface. A -10 temperature was reached after a 12-hour charging period after truck was loaded.

They were suitable for this type business for eight months of the year. But during the hot months of the summer the product temperature would increase 6-8 deg with the air temperature of the truck increasing from -10 at starting to a high of 40 by the end of the day.

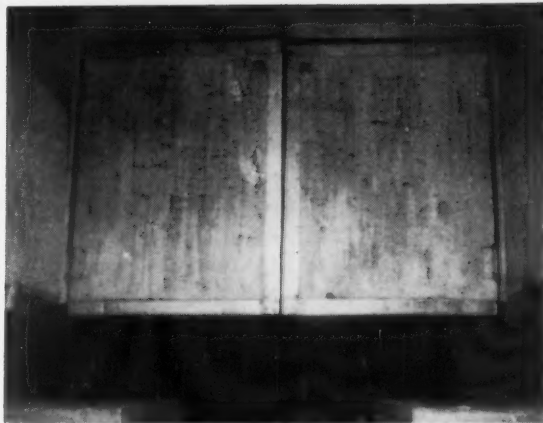
Three years ago an extensive study was made to determine what changes had to be made in order

to give better protection to the frozen foods. The recommendations of this study were as follows:

1. Truck should have constant refrigeration.
2. Plate surface should be increased to gain lower refrigeration.
3. There should be better circulation in the truck to move hot air to plates faster.
4. Truck body should be divided into two or more sections to protect last deliveries from increased temperatures caused by opening of doors on earlier deliveries.

Two years ago truck bodies were designed to meet these recommendations. Three bodies were built. After one year of operation the rest of the fleet was changed. This included further changes. There is no doubt that still further improvements can be made. These trucks, however, are meeting the present

(Please Turn to Page 62)



Above: Flapper door in middle of truck holds down the temperature on afternoon deliveries. It is made of plywood and has a 2-ft rubber skirt. Top and side edges of doors have rubber jacket. Below: Door curtains at rear door protects morning deliveries



Safe can shipments rely on good lading

Three graphic illustrations point up means to decrease damage-in-transit by proper lading techniques, divider sheets, partial layers, and block patterns are a help

THE LABEL may affect sales. Product quality and brand name are not always the final factors in the consumer's decision in selective self-service merchandising.

Let's assume we have a package that cannot fail to attract the consumer and skyrocket sales. But the sales do not materialize. Could this failure be reflected in can appearance or irregularities which we may ignore such as rust, dirt, dents, etc.? Or are these labels loose, screwed on, smeared with paste, or even dirty?

These conditions can and do exist and often the packer is not aware of the jeopardy of his product when displayed competitively at the retail level.

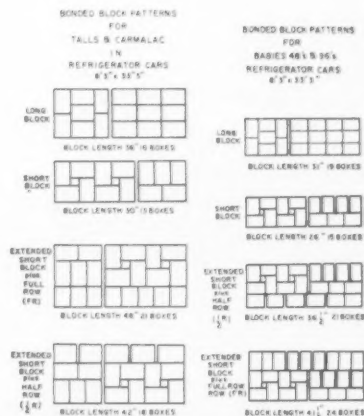
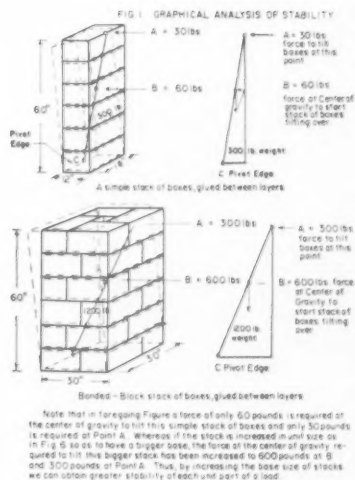
In-plant damage which occurs on the production line, in warehousing, and in mechanical or manual handling shows up at the retail level. The labeled can is your representative on the retailer's shelf.

Beaded Cans

The problems related to concealed damage at the retail level, which can be attributed to handling at the plant and distribution center, can be eliminated by using "properly and adequately" beaded cans. These are readily available to the canning industry. If you are not using beaded cans, perhaps your supplier can help you.

To obtain maximum package performance in storage and transportation, boxes should be 1/16 to 1/8 in. less in depth and the exact length and width of the contents when mechanically sealed. These dimensions are based on actual can measurements. A box that is oversize 1/8 in. in depth may bulge in storage from 3/4 in. to 1 in.

The transportation of food products is the vital link in the industry. In some instances this cost amounts to 20 per cent of the selling price of the product at the plant. This, of course, varies with product weight, price, and distance from the market. When a product leaves the plant, usually there is no further contact until it arrives at destination.



Therefore, close canner-carrier and customer relations are of considerable value.

Warehousing food products, whether palletized or hand stacked, requires the application of a method which creates stack stability. We know it is nearly impossible to stack 303's 20 boxes high in a straight stack, that is, one box directly on top of the other. So we use a tie, rick, or a bonded-block to obtain stack stability.

Forces in Transit

For the sake of comparison and to better understand the need for stack stability in transit, visualize a pallet of canned goods in transit on a lift truck in a warehouse. The starts and stops simulate longi-

tudinal force. The turns show lateral force and floor irregularities represent vertical force. These three forces also exist in transportation. If we stack the boxes in straight stacks on the pallet, each of the forces will set up conditions which can cause load failure and spilling.

Increase Stability

Placing the same number of boxes in a bonded-block pattern will increase the stability to the degree where safe handling is possible. The only difference between a lift truck movement and the movement in a freight car is that there are walls and doors in the car to keep boxes from spilling. In addition, the mass of the load is greater. The fact that the lading can surge or move under conditions of confinement, makes it possible for the lading to saw-tooth and damage itself.

This is especially true when loaded loosely and in straight stacks. Perhaps this can be further illustrated by visualizing the damage which would occur when the boxes spilled off the pallet in transit by lift truck.

The comparative stability of a bonded-block versus a straight stack or simple stack lengthwise is illustrated in Fig. 1.

An Example

We have established the scientific reasons for using the bonded-block method of loading freight cars. Now let's see how it can be accomplished:

How to use Load Calculating Tables in carloading.

Example: 600 cases tall x 1.05 = 630 cu ft
150 cases babies x .50 = 75 cu ft

Total 705 cu ft

To load in a refrigerator car, divide 705 cu ft by 276 sq ft (car floor area) to determine the average load height (31 in.). Next refer to the refrigerator car table. On the right hand side we find the table for babies. Because this is the smallest quantity it will be calculated first. You will note that under 31½ in. we can choose 144, up 6 cases, 6 high or under 36¾ in. 147, up 3 cases, 7 high. The second combination was used to obtain a load height for the babies which exceeds the load height of the tall, to be loaded against them. This will prevent crushing the top layer of babies.

Now we refer to the table on the left side to obtain the bonded-block combination for the tall. We find the tall loaded 4 high will yield an average load height of 34 in., which will be compatible with the babies when separated by a divider sheet. The tall loaded 4 high will require 640 cases to make a level load. But we only have 600 cases. Therefore, we are down 40 cases. This will be handled as shown in the following calculated load.

Babies 1 Ex. SB (¾R) 7 High 147 cases, up 3
Talls 10 LB 4 High 640 cases, down 40

To handle the 40 case differential we interpret the loading of the tall as follows:

Talls
(Table reading)
10 LB 4 High 640 cases, down 40

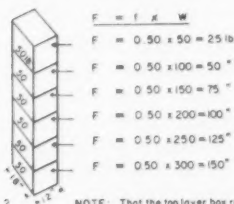
We know that the long block on the tall has 16 cases to the layer, so 3 long blocks 3 high, instead of 4 high will decrease the quantity of cases needed by 48, then we will load the tall as follows:

(Please Turn Page)

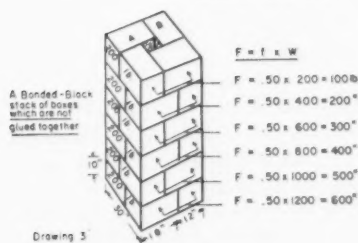
FIG 2 GRAPHICAL SUMMARY OF THE LAWS OF FRICTION

COEFFICIENT OF FRICTION (f) = (F) Force required to slide a body
(W) Weight of the body
or $F = fW$

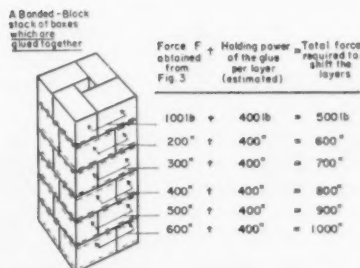
For these illustrations the Coefficient of Friction between fibreboard boxes is estimated to be 0.50 (for dry cars against dry cars the coefficient of friction is quoted to be 0.492)



Drawing 2 NOTE: That the top layer box requires a force of only 25 lb to move the box out of position, whereas the bottom box requires 150 lb.



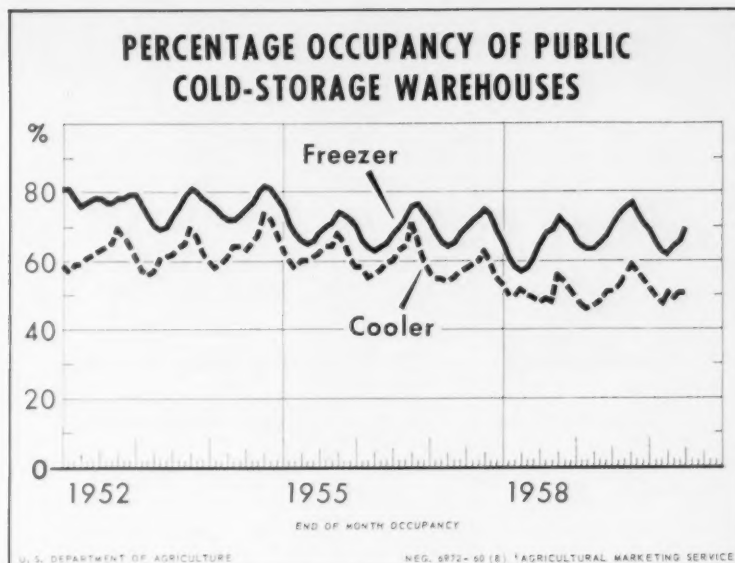
Drawing 3



Drawing 4

NOTE: By comparing the theoretical values of Drawings 3 and 4, we see that by the simple addition of a proper adhesive to the Bonded-Block pattern of Drawing 3 the holding forces have been increased from 167 per cent to 500 per cent of the original force. Therefore, if we use and expand these loading principles in freight car shipments, we can greatly build up the resistance forces to prevent shifting and consequent damage.

Refrigerated warehouses had a capacity of 942 million gross cubic feet when USDA survey was taken. Deep freeze shows faster rate of growth since 1957



U. S. freezer capacity grows

REFRIGERATED warehouse space in the U. S. is increasing with the biggest gains being recorded in below-zero temperatures.

This is the report of the U. S. Department of Agriculture Department following its 20th biennial survey. The report excluded Alaska and Hawaii, two states which would have increased the total by 3 million gross cu ft.

Crop Board Report

Refrigerated warehouses, as of Oct. 1, 1959, according to the survey by the Crop Reporting Board, had a capacity of 942 million gross cu ft. About 482 million cu ft could hold temperature between 0 and 50 deg F. There were 460 million cu ft which could hold 0 and below.

Below Zero

Since the Oct. 1, 1957 survey, refrigerated warehouse space increased 41 million cu ft. Of this

two-thirds was in the range of 0 and below.

Capacity declines were reported in the West North Central and West South Central Regions. However, these losses were countered by gains in all other regions. The Pacific, East North Central, South Atlantic, and Middle Atlantic Re-

gions reported substantial increases.

The table below shows the results of this 20th biennial survey. The graph shown above was prepared as a part of a monthly Agriculture Department survey showing the percentage of this space which is occupied. •

Gross Refrigerated Warehouse Capacity, October 1, 1959¹

Type of Warehouse	0° F. or below	Above 0° F. to 50° F.	Total	Percentage change since 1957
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Public ²	352	216	568	+ 4
Private & Semiprivate ²	92	232	324	+10
Meat Packing.....	16	34	50	-19
U. S. Total ³	460	482	942	+ 5

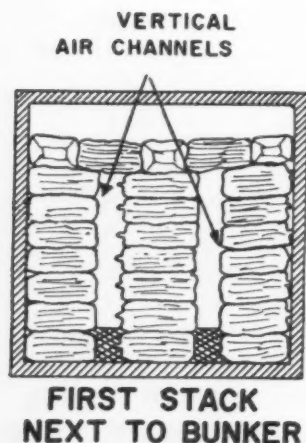
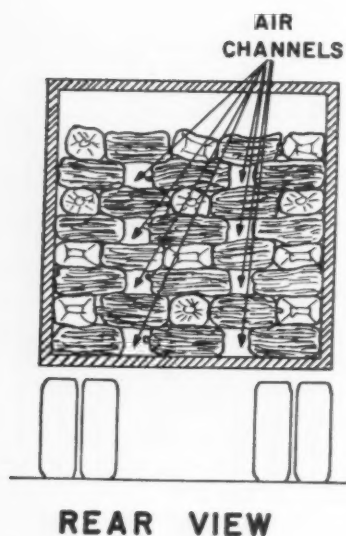
¹ Does not include space owned or leased and operated by the Armed Services.

² Includes Apple Houses.

³ Does not include 3 million gross cubic feet in Alaska and Hawaii.

New loading method aids air circulation

New method of stacking potatoes improves air circulation and prevents spoilage from overheating during transit in highway trailers



ABOUT two per cent of the early crop potatoes shipped by truck spoil en route. Another two per cent are lost in the retail store. The reason for this loss, at least in part, is overheating during transit.

Stacking

A new method of stacking bagged potatoes in trucks has been developed and tested successfully by transportation researchers in the Agricultural Marketing Service of the U. S. Department of Agriculture. This method improves the flow of air through the load, thereby reducing spoilage and lengthening service life.

The stacking pattern provides eight air channels running from the front to the back of the trailer.

Three columns of potatoes in 50 lb paper bags make a base for the first stack. It is arranged with two vertical air channels

each solidly capped with bags. This prevents entering air from bypassing the remainder of the load.

The other stacks have the bags arranged alternately cross-wise and lengthwise in the trailer. Channels for air passage occur in every other layer, allowing two to the layer, eight in all. Each layer is lined up the same way to form the channels from front to rear.

Air to Bottom

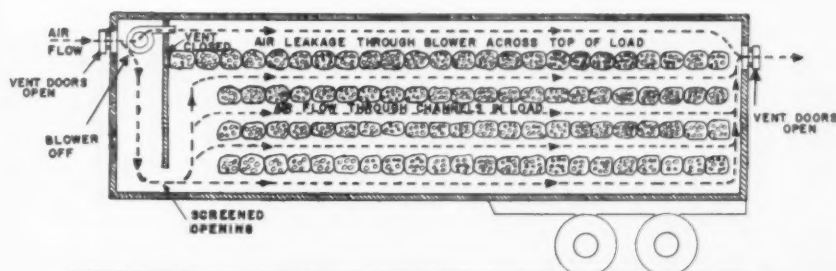
Air entering through the front vents on the trailer's nose is forced to the bottom of the bunker by closing the inside vent in the bunker bulkhead. It then passes through the bottom opening in the bulkhead into the vertical channels of the first stack. From here the air goes into the horizontal air channels and through the load. Circulation across the top comes from air leaking through the blower at the top front of the trailer.

The early varieties of potatoes are very susceptible to spoilage from overheating. Proper ventilation is important in moving them. Researchers find that this loading method solves the problem.

Little Loss

There is little loss of load capacity. The load is stacked higher to make up for the load space lost by the air. Even if you had to lose some load space, the experts say it's worth it.

With this new method the public should get better produce. Money will be saved all along the marketing line. The losses should be cut down considerably. This means the farmer, dealer, and consumer will get a better deal. ●



TMs should lean toward new computer systems to program fresh information, study all phases of distribution ATC Convention delegates hear

EUGENE Landis is the new president of the Associated Traffic Clubs of America. The director of traffic for International Minerals and Chemicals Corp., Skokie, Ill., was elected at the group's Annual Meeting.

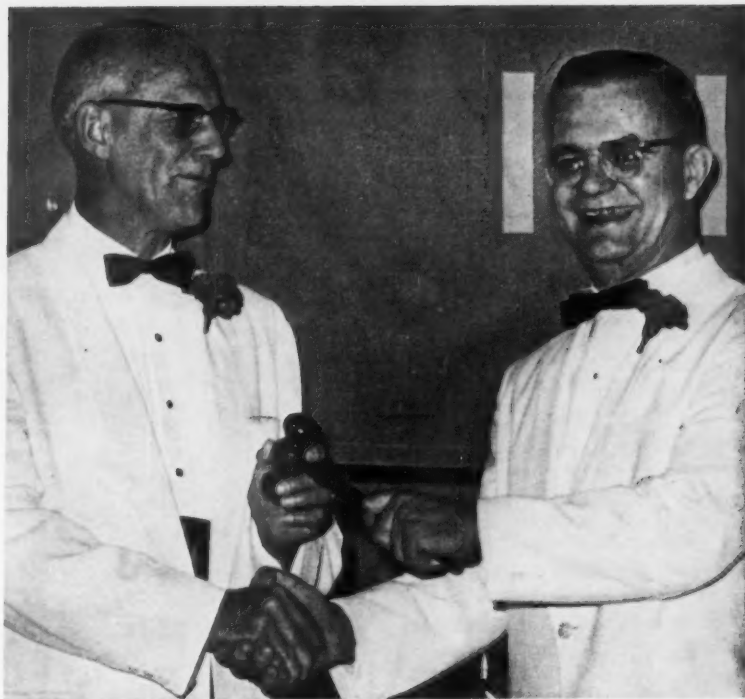
Serving with Landis are Warren W. Brown, assistant vice president-Chicago, Western Pacific Railroad, executive vice president; Floyd C. Day, circulation director, Traffic World, secretary; and Bernard H. Ways, vice president, Fleet Transfer Co., Baltimore, Md., treasurer-assistant secretary.

Delegates to the two-day convention listened to a wide range of speakers who discussed traffic managers and the growing need for more activity by them in fields closely related to traffic; the benefits of an educational and historical traffic club library on recorded tape; and the establishment of the ATC Insurance Corp. organized to provide reduced-term insurance for members of traffic clubs.

Immediate Past Chairman of the Board Frank L. O'Neill was honored with a plaque in recognition of his service to the ATC in various offices. The six years of service as ATC treasurer completed by R. Paul Yellen were saluted by the officers and membership. One educator who addressed the convention was Dr. Edward Smykay, professor of business administration at Michigan State University.

Smykay told the delegates that transportation is in a "ferment" and that if traffic managers are to avoid missing a key role in the distribution management picture they must enlist the benefits of broader education. Smykay pointed out that "blind reliance on legal formalisms of past eras" leads only to decadence.

During the course of the convention several regional vice presi-



Eugene Landis (right) is congratulated after his election as ATC's new president. L. E. Galaspie, retiring ATC president, turns over the gavel

ATC elects Landis head, Cites new skills needed

dents were elected. They include Lee Cisneros, director-traffic and sales service, Godfrey L. Cabot Co., Boston, Mass; Henry A. Kruse, general agent, Rock Island Lines, Philadelphia; Hal G. Williams, executive vice president, Norfolk, Baltimore and Carolina Line, Norfolk, Va.; and Rhodes C. Berrey, vice president-traffic, U. S. Gypsum Co., Chicago.

Also George C. Stohlman, executive general agent, Missouri Pacific Lines, New Orleans; R. H. Heilman, director of transportation, A. O. Smith Corp., Milwaukee; John W. Scott, vice president-traffic, Kansas City Southern Railroad Co., Kansas City, Mo.; Ray W. Sager, assistant freight manager, Rock Island Lines, Houston; James

R. Wildman, traffic manager, Adolph Coors Co., Golden, Colo.; K. C. Batchelder, traffic manager, West Coast Lumberman's Association, Portland, Ore.; and Mrs. Madge Henderson, general manager, Empire Freight Co., Inc., Los Angeles.

There are several new additions to the ATC Board. The following are new directors: James A. Whitt, Anderson Clayton Co., Roy E. Herrington, Louisville and Nashville Railroad, Jacksonville, Fla.; Pat Stinson, foreign freight agent, Southern Pacific Lines, San Francisco; John F. Coyle, assistant general traffic manager, Eastman Kodak Co., Rochester, N. Y.; and Miss June Hottman, Consolidated Freightways, Inc., Portland, Ore.

By A. W. Greene
Editor, *Distribution Age*



Containerization - Part II

The problems ahead for container shipping

Containers and handling methods are in trial-and-error stage. But solutions to problems are at hand. Many are making containers pay

In Part 2 of his container story, the editor discusses the problems which must be solved before maximum benefit can be received from container shipping. Part I was published on Pages 24-25 of the October issue.

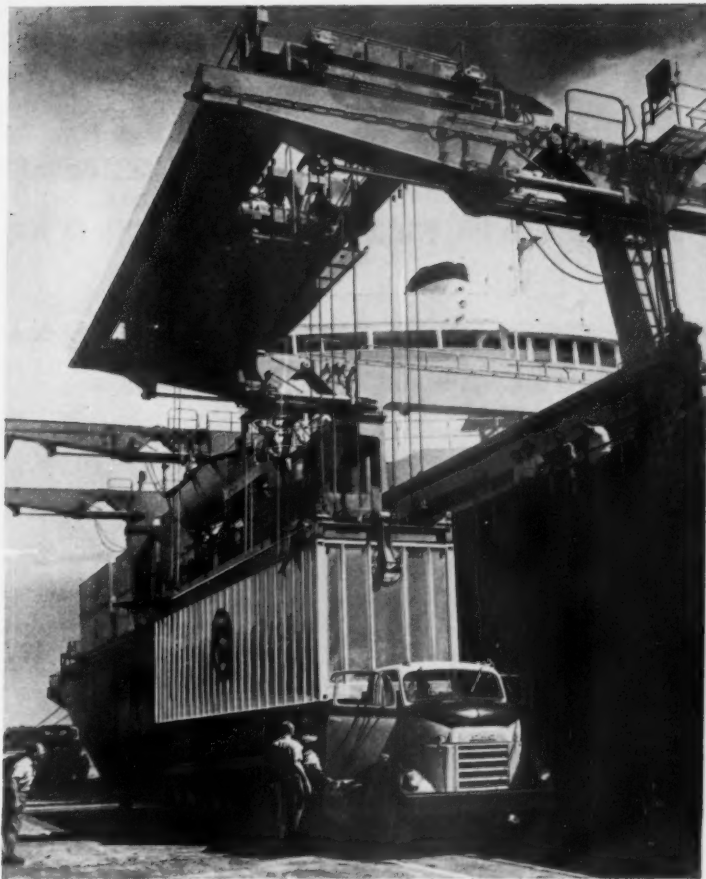
THE CONCEPT of van containers is that of demountable truck bodies, with modules to accommodate various LTL shipments with sealed truckload advantages.

What can be called prototypes are in use today. They are available for a wide variety of general and special purposes. They carry bulk commodities, raw materials, in-process goods, delicate and high value equipment, general merchandise, liquids and solids, heated and cooled.

As yet, they lack complete interchangeability for inter-mode transportation. However, the American Standards Association,

at the behest of ASME and AMHS and with the cooperation carrier and related industry associations—is attempting to solve this problem. In fact, ASA's MH-5 Committee, organized in July 1958, has made good progress. It has developed basic specifications for a fully integrated series of standard freight containers with universal carriage interchangeability.

As an example, it has gained unanimous approval from repre-



sentative carriers and shippers on its size modules. These are based on 20- and 40-ft lengths; with the 10-ft module, 30-ft intermediate size, and 8 x 8-ft end dimensions. In fact, with its four subcommittees and special task forces, it also developed standards for the other types of containers outlined in this report.

The ultimate goal is elimination of handling, damage, and loss of merchandise between shipper and consignee. It must be achieved regardless of distance and transfers to other modes of carriage, within a shorter time and at lower net cost than possible under normal conditions today. This won't be easy.

The biggest problems relate to technical and operational limits of each mode of transportation. Tare weight, for example, is a major factor in air and highway transportation. But weight is not a problem in rail and water transportation.

Any weight compromise must take operational factors into consideration. These containers must be strong enough to be stacked six or seven high in a container ship, and stand up under the stresses of 30-deg pitch and roll in rough seas. Stress problems also are encountered in rail service when the trains take curves at high speeds. A greater rail problem is the impact of humping.

In addition to the container, the on-off and in-out handling methods and equipment are in the trial-and-error stage. So are the types of highway chassis and most of the rail cars that carry these containers. Further, such accessory items as safe, interchangeable tie-down devices still must be perfected.

And so on. But the solutions to these and most other problems are at hand. They only require agreement, coordination, and cooperation. That, too, isn't easy.

In the meantime, the prototypes

roll on, paying big dividends all the way.

Concept Sound

There is no question that the basic concept of shipping as many products to one destination as possible in one container—or in the fewest possible containers—is sound. The fact that it has been tried several times over the years, but failed to take hold, is more of an indictment of the psychological rather than physical approaches to the attendant problems. Now that transportation remains as the sole major area of cost reduction, and that all modes of carriage want all the business they can get, there appears to be enough incentive to bring success.

Looking at it solely from the shipper's viewpoint, here are several challenging and stimulating reasons why carriers are being pressured to provide container service.

1. As long as the shipper must handle small orders, he may as well do his own consolidating. It takes no more time to place small orders into a container than in a pile to be picked up by a consolidator-forwarder.

2. Even for full truck loads, or carloads, it takes less time and labor to load and unload.

3. Many carriers offer better rates for container shipments.

4. Containers require less protective packing and less expensive crating. In many cases, even individual product wrapping can be eliminated.

5. They also eliminate costs and delays of rehandling separate shipments at transfer points. This also wipes out the chances of mixups, oversights or lost shipments.

6. Total transit time can be reduced greatly.

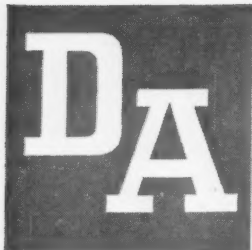
7. Such paperwork as detailed shipping lists and in-transit checking are eliminated.

8. In transit, contamination from outside sources on shipping platforms or in mixed cars, is almost completely reduced.

9. Experience shows a worthwhile reduction of breakage or other damage.

10. Experience also shows that containers practically stop pilferage.

(Please Turn to Page 63)

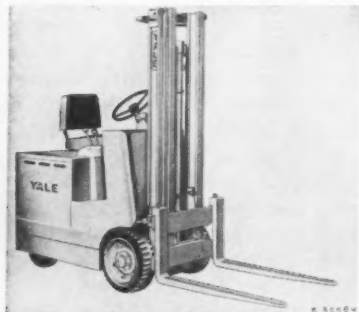


NEW PRODUCTS

... FOR FURTHER INFORMATION

New Truck, Hoist Lines

New lift trucks and hoists are being introduced by Yale Materials



Handling Division. Representative of the new trucks is a low-silhouette electric lift truck with a load capacity of from 2000 to 3000 lb.

Circle 35 on Card, Facing Page 52

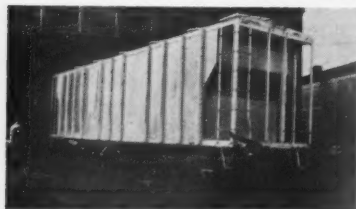
Electric Power Unit

A compact rolling electric power unit is being offered by Colson Corp. It eliminates manual pushing of heavy loads. It converts hand propelled equipment to power propelled. Especially suited for warehouses, the handler is available in 3000 and 8000-lb capacities. Three pushbuttons in the handle's center provide finger tip control of acceleration and braking.

Circle 36 on Card, Facing Page 52

Aluminum Hopper Car

There's an all-aluminum hopper car in the works at Magor Car Corp. It will be the industry's first covered hopper car fabricated of aluminum alloy. The car is a triple-hopper design



intended for bulk shipment of cement, grains, aggregate, other granulars. Huckbolt fasteners are used to join all mechanically fastened structural assemblies.

Circle 37 on Card, Facing Page 52

Stenciling Marking Kit

A stenciling marking kit is being offered in 12 sizes by Weber Marking Systems, Inc. The kit includes a hand-printer with metal stand, 25 stencils,

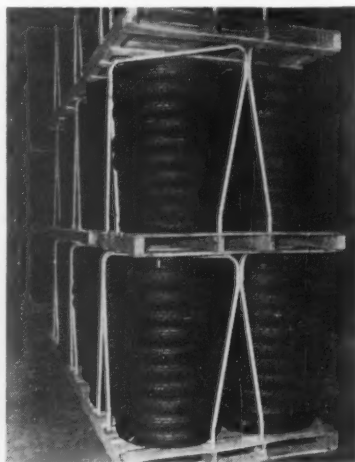


a 4 oz bottle of fadeproof waterproof ink for 30,000 impressions. Also a stylus and illustrated instructions anyone can easily follow. A free trial is available, too.

Circle 38 on Card, Facing Page 52

Tire Storage Rack

Here is a tire storage rack designed so that the four corners of a pallet are open for picking from any pallet without disrupting the pallets stacked above it. Two methods of securing the racks to the pallets are available. One

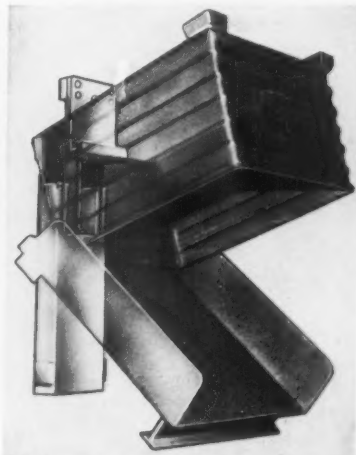


is planned for easy removal from pallet when not in use—good for customers who want knock-down units for space reasons. The second is for those who prefer permanently secured units to pallets. Both are available from Warehouse Storage Systems Co.

Circle 39 on Card, Facing Page 52

Hydraulic Dump Attachment

Now you can dump all makes of drop bottom boxes regardless of con-

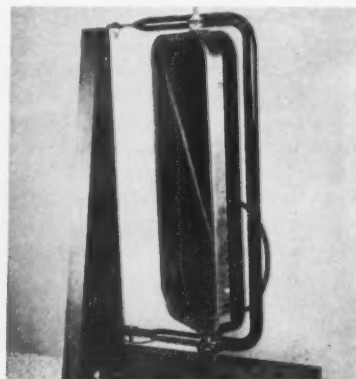


tents. Little Giant Products, Inc., dumper fits all lift trucks and comes with hanger blocks to mount on any carriage. Simple bracket on boxes engages bracket on dumper.

Circle 40 on Card, Facing Page 52

Control Mirror Via Cab

Here is a cab controlled mirror for right and left use on tractor cabs. It eliminates all blind spots. On the highway, the mirror shows locations of



merging and passing traffic. Backing and parking can be accomplished in less time. Royal Engineering Co., Inc., makes it with a positioning switch and one for defrosting.

Circle 41 on Card, Facing Page 52

and EQUIPMENT

PLEASE USE READERS' SERVICE CARD . . PAGE 52

Flag-Type Wheel Chock

Positive-grip tool steel spurs on this chock contact the rail to hold freight cars in spotted position preventing motion in any direction. The

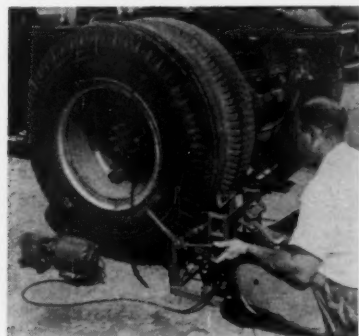


Aldon Co. has designed the chock to eliminate the hazard of creeping and runaway cars. Four styles are available. Safety-grip handles let you place the chock and remove it without tools.

Circle 42 on Card, Facing Page 52

Tire regroover

Many truck operators are adding as much as 35,000 miles use to each truck tire with this tire regroover. Cost of regrooving a tire is 75 cents. The regroover makes use of the rubber wasted when a tire is buffed down in



preparation for recapping. It has a heated blade which cuts any zig-zag pattern or straight groove. It can handle tires from 7:50 x 20 through 11:00 x 22. Honeycutt Tool Manufacturing Co. has it.

Circle 43 on Card, Facing Page 52

Stainless Steel Tank Truck

You'll haul liquid chemicals in the new all-stainless trailer tank trucks made by Krueger Fabricating Co., Inc. They use stainless steel supplied by Allegheny Ludlum Steel Corp. The design consists of a round tank with



new basket-type construction. The basket construction connects the front head section to the rear head section — and with intermediate sections along the tank. The surge of liquid is then distributed more quickly and uniformly throughout the tanks.

Circle 44 on Card, Facing Page 52

Telescoping Floor Crane

Thern Machine Co. feels you may find multiple uses for its new telescoping floor crane in your warehouse or manufacturing area. It features a three-position telescoping mast and



boom combination for a maximum reach of 62 in. Maximum boom height is 105 in. Load capacity is 700 lb, but reaches 1500 lb in fully retracted position.

Circle 45 on Card, Facing Page 52

Cool Conveyor Belt

Main feature of the conveyor belt from Hettrick Manufacturing Co. is its heat resistant quality. It handles materials up to the extreme tempera-



ture range of 1100 deg F. From seven to 12 plies of asbestos and cotton heavily stitched with heat-resistant twine and double stitched along the edges to prevent curling make up the belt.

Circle 46 on Card, Facing Page 52

Fencing Won't Corrode

A corrosion resistant, non-conductive, fire-retardant fencing is now made by Crompton and Knowles. It is composed of continuous strands of glass rovings and polyester resins.



The resins make many color combinations possible. You can code with color for safety, etc. The fencing can be cut by tinsnips, hacksaw, or hand-powered tools.

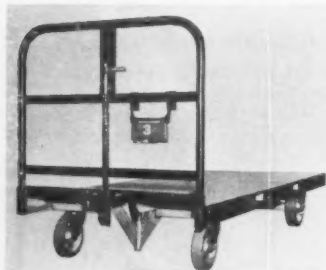
Circle 47 on Card, Facing Page 52
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New Products and Equipment

(Continued from Preceding Page)

In-Floor Tow Pin is New

Here is a new type in-floor tow pin for floor-type tow conveyor systems. It is specially designed to be out of the way of an operator's feet. Midland Equipment Division puts the pin



in line with caster wheels so that it will lift the swivel wheels and not be damaged when a truck goes along ramps. The pin is of hardened steel and rotates freely in its holder. Wear is distributed evenly.

Circle 48 on Card, Facing Page 52

Fast-Cure Floor Surface

The Garland Co. has a corrosion-resistant floor resurfacer. It carries an unconditional guaranty for five years. Although Garland does not supply the labor, it will include labor used by the customer in the guaranty. The formation is especially formulated for food processing plants, refrigerated warehouses—other installations where dampness has made effective floor repairs difficult.

Circle 49 on Card, Facing Page 52

New Diesels in USA

The British have landed again. This time it is Leyland Motors, Inc., with a heavy diesel "haulage model" with



gvw rating of 32,000 lb and payload of 21,900 lb. Its six cylinder diesel motor delivers 110 brake hp. Leyland is a subsidiary of Jaguar Cars, Inc.

Circle 50 on Card, Facing Page 52

Vibrator Stops Plugging

A new pneumatic impacting vibrator for pipe is now made by National Air Vibrator Co. It can be mounted



on standard 4, 6, or 8-in. pipe. Wet moist material can be kept moving through all types of piping arrangements.

Circle 51 on Card, Facing Page 52

Parking, Emergency Brake

A lightweight parking and emergency brake can give you added safety. Developed by Hydro-Aire Co., the brake offers a high average braking force over its full stroke. The standard unit is keyed to type 30-in. brake chamber. New ones are for type 25 chambers. The brake is applicable to trucks, tractors, trailers—prevents runaway and operation of vehicles with an unsafe air supply.

Circle 52 on Card, Facing Page 52

Warehouse Dehumidifier

Dehumidifier from Federal Chemical Products Co. absorbs 13 gal. of moisture from the air to prevent corrosion,



mold, and other rotting. Warehouses and cold-storage rooms will find that the unit also absorbs odors and industrial vapors. Its own pail catches all drips.

Circle 53 on Card, Facing Page 52

Self-Inking Stamps

It is claimed that there are no small, breakable parts in the new line of self-inking stamps available from Krengel Manufacturing Co. Far longer

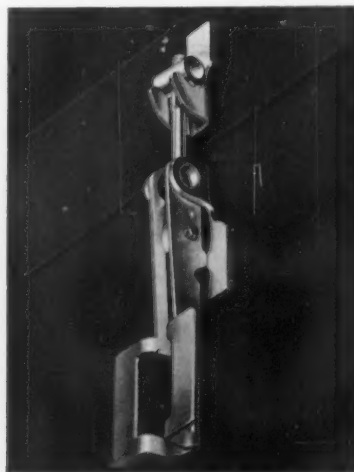


life is promised. The stamp has a lock position. It prevents the marking die from resting on the pad. No oiling is necessary.

Circle 54 on Card, Facing Page 52

Reusable-Container Latch

Camloc Fastener Corp. has a heavy-duty container latch designed for use with reusable containers. Transit cases also can make use of either of two sizes: 5 1/4 in. and 3 3/4 in. The former

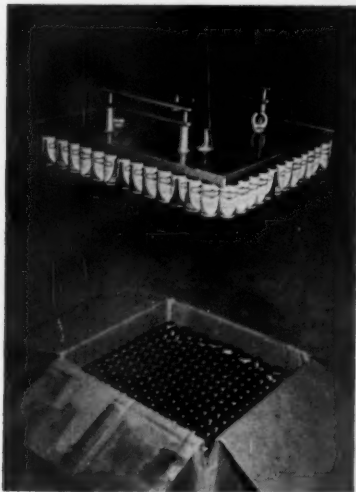


has two drawhook pivot positions; the handle of the latter allows the drawhook to be stowed to protect it from damage when in open position. It also permits use of two hands or a bar to pull open when icing impedes action.

Circle 55 on Card, Facing Page 52

Can Lifting Magnet

A new permanent magnet for lifting cans and other light materials is being produced by **Stearns Magnetic Products**. A manual discharge mechanism releases the load. Operator



presses a pair of handles which push a stainless steel cover plate away from the face of the magnet. The load is then forced out of the magnetic field and released. Various sizes and shapes fit different size containers.

Circle 56 on Card, Facing Page 52

Barrel and Box Skid

If you are concerned with barrels and boxes, this pallet may be for you. It is claimed to be lighter and easier



to handle than many wooden skids. **Palmer-Shile Co.** makes it of steel all-welded construction.

Circle 57 on Card, Facing Page 52

Sweeper Improved

Wayne Manufacturing Co. has updated its sweeper. Almost every inch of your warehouse can be picked clean at a rate of 40,000 sq ft per hour. The engine is larger making it easier to climb inclines. Special louvered baffle

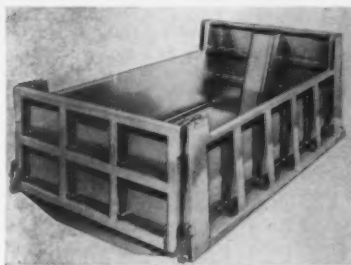


design minimizes back pressure. If you want it, a water muffler will deflect exhaust to the rear.

Circle 58 on Card, Facing Page 52

Aluminum Dump Body

The aluminum in the new dump bodies from **Hercules Steel Products Co.** lets you haul optimum legal payloads with construction features of



steel bodies similar in design. The bodies fit tandem axle chassis in the 30,000 to 65,000-lb gvw range. Hoist well housings accommodate weight-saving front-mount telescopic hoists.

Circle 59 on Card, Facing Page 52

Heavy-Duty Fork Lift

Big loads are made for this **Towmotor Corp.** lift truck. It performs at



speeds up to 15 mph with loads of 16,000 lb. If your operation requires this, handling time can be reduced.

Circle 60 on Card, Facing Page 52

► For prompt service, use postage-free postcard provided to obtain **FREE LITERATURE** and **NEW PRODUCT** information described in this issue. All material is **FREE** unless otherwise noted.

High Straddle Carrier

Close to the clouds, but realistically designed is this high-lift straddle carrier by **Clark Equipment Co.** It stands 48 ft high, can carry 60,000 lb.



Its height makes it an even match for loads tiered two or three high. Load hooks are raised and lowered by four hydraulic cylinders. Metering pistons regulate lifting and lowering speeds.

Circle 61 on Card, Facing Page 52

Steam Cleaning Gun

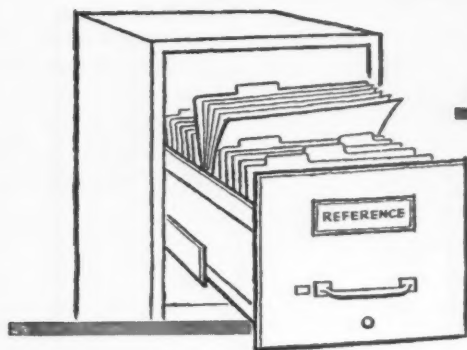
Keep your maintenance force on top of power-stealing grime with the new power cleaning gun by **Bonus Products Manufacturing Co.** The gun operates from any compressed air line to power-clean engines, truck and tractor bodies, lifts, and even walls



and floors. Labor time on an average engine using the gun is said to take 10 minutes. A clog-proof brass air jet located in the nozzle of the gun picks up small amounts of cleaning solvent. The solvent is mixed with the compressed air for power cleaning.

Circle 62 on Card, Facing Page 52

DISTRIBUTION AIDS



- Catalogs
- Specifications
- Directories
- Case Studies
- Reports

Safety MH Equipment

E. D. Bullard Co. in its new catalog has four major sections of safety materials handling equipment and accessories. Safety hooks for hoists, cranes, and pullers; insulated tension links; and back-up alarms are covered.

Circle 63 on Card, Facing Page 52

Shipping/Warehousing Tips

A special report on efficiency in all phases of shipping and warehousing has been prepared by Manpower, Inc. It is entitled "100 Ways to Save Money in Packing, Shipping, and Stockroom Operations."

Circle 64 on Card, Facing Page 52

Portable Rope Winch

Whether you transport heavy cargo or bulky palletized loads, a rope winch may help you. One made by Air Cargo Equipment Co. is pictured in a booklet of four pages. The winch is portable, compact.

Circle 65 on Card, Facing Page 52

Industrial Air Needs

A new 16-page brochure on compressed air for industrial requirements has just been published by Cooper-Bessemer Corp. The piece features the line of industrial air compressors ranging from 100 to 400 hp ratings.

Circle 66 on Card, Facing Page 52

Containers, Truck Bodies

Truck bodies and trailers plus cargo containers are shown in a folder from Grumman-Aerobilt. The company in addition to its truck body production builds a variety of semi-trailers including closed high-volume vans, open tops, and moving vans. Aluminum, steel, fiberglass, and plastics are used in the company's range of cargo containers.

Circle 67 on Card, Facing Page 52

Warehousing Services

Savings on distribution costs may be possible for you after you read two brochures from Wakem and McLaughlin. The Chicago warehouse recently added 70,000 sq ft of space to its facilities. Inside rail sidings, fully-protected truck docks are shown along with a comparison of distribution costs.

Circle 68 on Card, Facing Page 52

Shelving Catalog

A 36-page booklet describing Penco Div., Alan Wood Steel Co.'s complete line of industrial and commercial steel shelving is now available. It contains full information on boltless T-line



shelving, angle shelving, tool storage inserts, drawer case units, bin units, custom shelving arrangements, and truck shelving. Typical applications are discussed to aid in selecting the most suitable type of shelving for an efficient installation.

Circle 69 on Card, Facing Page 52

Overhead Conveyors

A 24-page book from Econ-O-Veyor Corp. explores powered overhead conveyors—many of which may be applicable to your operations. A conveyor comparison is made. Methods are given for determining turn radii and work spacing from adjacent structures.

Circle 70 on Card, Facing Page 52

Lift Truck Fact Sheet

Battery-powered walkie lift truck is the subject of a recent fact sheet from Liftequip Corp. The truck features overall length of 54 in. Its height is 68 in.

Circle 71 on Card, Facing Page 52

Integrated Load System

Unit-Load Car Corp. has developed a freight car which handles loads without dunnage. Each of the six sections of the car, as a folder shows, is designed to hold four unitized 40 x 48 loads (or eight if double tiered). The car's corrugated floor is designed to follow the same male and female module that is used throughout the system and its components.

Circle 72 on Card, Facing Page 52

Service Guide

Johnson Motor Lines is offering a new edition of its service guide which includes a list of personnel, terminals, and sales offices. Also included is the Johnson-Atlantic approximate mileage and running time schedule.

Circle 73 on Card, Facing Page 52

Insulated Garments

Freezer-wear protective clothing insulated with a ¼ in. special high density urethane foam has been developed by the Freezer Wear Div. of the Flexa Corp. of America. Weighing less than 3½ lb it permits men to work efficiently at 30 deg below zero for 2½ hours at a time. An illustrated catalog is available.

Circle 74 on Card, Facing Page 52

Safe, Anti-Skid Floors

Now you can make floors, stairways, ramps, docks all anti-skid. Carborundum Co. tells you how in a new folder. Firestone Tire and Rubber Co. had a hand in the new latex abrasive compound's development too.

Circle 75 on Card, Facing Page 52

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High Cube Trailer Bulletin

The Brown Trailer Div., Clark Equipment Co. has prepared a six-page bulletin describing its AXW high cube trailer series. Thirteen photos show the new model and optional modifications from various angles and illustrate key features of construction. Condensed specifications are included.

Circle 76 on Card, Facing Page 52

Wooden Pallets, Skids

Types of wooden pallets and skids in use by industry are shown in a catalog sheet from Gilbert Lumber Co. The pallets do not represent any particular type made by Gilbert. The sheet explains essentials of palletization, qualities of air-dried hardwood. Gilbert builds to specifications.

Circle 78 on Card, Facing Page 52

A Case of Steel Strapping

Anyone who is tangled up in the handling of treated poles and pilings may use a new folder from Signode Steel Strapping Co. as an aid to solving some problems. The folder shows safe unloading procedures and gives a 12 point safety check list. Seven illustrations show safe manual unloading; three concern crane unloading.

Circle 79 on Card, Facing Page 52

October Reprints

Now that you have had an opportunity to read the *October Transportation Annual* you may want copies of the piggy-back, birdy-back, fishy-back, or quick router sections. Copies are available in quantity at a nominal charge. Write: The Editor, *DISTRIBUTION AGE*, 56th and Chestnut Sts., Philadelphia 39, Pa.

Literature from the Advertisements

Listed below are brief descriptions of catalogs, brochures, booklets and other literature offered by advertisers in this issue of *DISTRIBUTION AGE*. To get your copies of the items offered, simply circle the appropriate number on the Reader Service Card, facing Page 52.

Automatic Protection from Fire

Immunity from loss by fire or burglary can reach 99.99 per cent with an American District Telegraph Co. installation. Automatic protection 'round the clock. Circle No. 10.

Fork Lift Steering Ease

Two driving wheels ease shipments into place with Lift Trucks, Inc.'s fork lift. Braking with handle in any position. New bulletin is ready. Circle No. 5.

Gas Lift Truck Has High Torque

You'll find that you can ease the profit squeeze with a gas lift truck by Automatic. No clutch or shift to wear out. High torque moves more tonnage with less fuel. Circle No. 11.

Load from Ground to Carrier

Take a load from ground to carrier over a loading ramp by Magline, Inc. They are portable, light but sturdy. Circle No. 6.

More Lift Per Battery Charge

Current Miser control on Automatic's electric trucks increases work time per charge by 60 per cent. Climbs 15 per cent grades with full load. Circle No. 2.

Speed Loading. Smother Costs

Eliminate dock congestion with a dock-board by Magline, Inc. Magnesium light, they are easy to move—safely handle loads up to 20,000 lb. Circle No. 8.

Narrow Aisle Traveler

A single master control handle directs Clark Equipment's narrow aisle fork truck. Loads up to 4000 lb are positioned with power steering. Operates in 7 ft aisle. Circle No. 77.

Personalized LTL Shipments

You get personalized attention for your shipments from McLean-Hayes. The motto: Service to customers comes first with me, is held by each employee. New wall chart shows service points. Circle No. 14.

Your Platform Truck Needs

Your platform truck needs are a major concern at Colson Corp. Choose the right one from hundreds now available. From caster to completion, each part is precision made. Circle No. 3.

Job-Matched Fork-Lift Trucks

Moto-Truc Co. makes a wide array of walkies and small rider trucks to fit your handling needs. Learn how inexpensive creative materials handling can be. Circle No. 1.

Halve Lift Truck Maintenance

There are features on Elwell-Parker electric trucks which can halve your maintenance. Demountable controls and step-less speed control are some. Circle No. 13.

Recording Thermometer

The recording thermometer from Pacific Transducer Corp. uses a dry stylus to record temperature and time. No ink to spill or freeze so pack it in with shipments. Circle No. 7.

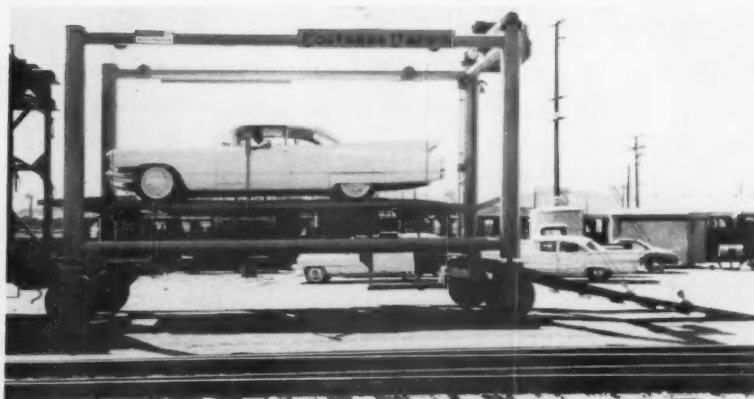
Planning a New Truck Dock?

If you're planning a new truck dock check with Kelley Co.'s reference book on loading dock layout. Includes specifications for Kelley Adjust-A-Lip dock-board. Circle No. 12.

Pallet Truck is Hydraulic

Hand-operated pallet truck from Stokvis Multiton Corp. lift 7¾ in. in three strokes. Lowering speed is constant regardless of load. Circle No. 9.

Mobile Elevator



A new type mobile elevator, the Paccoco Auto Packer is designed for fast end loading and unloading of tri-level, auto-carrying rail cars, has been developed by Pacific Coast Engineering Co. The new equipment has already been put in operation with the Southern Pacific tri-level auto-pack cars. It can load or unload anywhere in a railroad yard where an automobile can be driven, thereby eliminating congested permanent loading ramps and saving the time involved erecting and dismantling portable ramps. It is a self-contained, self-powered, diesel-electric unit with safety push button controls, and is operated by drivers from inside the autos.

Chuting the News . . .

(Continued from Page 10)

Wilson Elected Chairman of Industrial Relations Group

J. Robert Wilson, of Akron, was recently elected chairman of the American Trucking Associations' Industrial Relations Committee.

Wilson is vice president-employee and labor relations and a member of the Board of Roadway Express, Inc. He succeeds Frank O. Blunden, vice president, Kramer Brothers Freight Lines, Detroit.

The committee held its annual meeting recently in Detroit. Other officers elected included: First Vice Chairman Alvin R. Holmes, of Holmes Transportation Service, Worcester, Mass., and Second Vice Chairman J. Albert Kramer, of Rabiger-Kramer Co., Philadelphia. Benjamin R. Miller, director of ATA's industrial relations department, Washington, D. C., is secretary.

—DA—

A hydraulic cylinder similar to an aircraft shock absorbing landing gear is being used on railroad cars to reduce damage.

Modern Cargo Handling

A two-day symposium on "Modern System of Cargo Handling" and a three-day exposition of equipment drew a large attendance at Pier One, New York City on Sept. 27-29. It was sponsored by the U. S. National Committee of the International Cargo Handling Coordination Association.

The symposium was based on four panel discussions, two each day. "The Interrelationships of Transport Modes" and "Capital Investment in Containerization" were the topics for the first day. "Visual Presentation of Modern Systems in Breakbulk Operations" and "Related Aspects and Summary" were the themes for the second day.

The exhibits covered all available space, overflowing outside the pier area. These will be illustrated and described in the next issue.

—DA—

U. S. exports following their initial recovery in the second half of 1959, surged sharply upward in the first half of 1960. The \$9.7 billion value figure was exceeded only in the first half of 1957.

Club Briefs

The Traffic Club of Brooklyn recently saluted a major port by holding a Port of New York Night with a showing of the Port of New York Authority's film, *The Fabulous Decade*.

Arthur N. Granzen, executive secretary of the Traffic Club of Newark, N. J., was given a testimonial dinner by fellow officials and club members in recognition of his 41 years of service to the club.

The Eastern Industrial Traffic League held its Annual Meeting recently. Main speaker was E. J. Vinnicombe, Jr. who accented his remarks on the Far East with films of his recent travels there.

The World's Most Mechanized Post Office is the title of the film viewed by the New York Chapter 5 of Delta Nu Alpha recently.

Guaranteed Rates—To Be or Not to Be was the question discussed during a monthly meeting of the Metropolitan New York Chapter Association of Interstate Commerce Commission Practitioners.

Industrial Night was enjoyed by the Transportation Club of Toronto recently.

The Annual Meeting of the California Chapter of the American Society of Traffic and Transportation, Inc., was held in Oakland recently.

The Philadelphia Chapter of the Society of Packaging and Handling Engineers met recently and elected the following to the Board: John Mount, Joseph Krager, R. F. Tettermer, William Scott, and John Davidson.

A special luncheon sponsored by the Capital District Traffic Association of Delta Nu Alpha Transportation Fraternity, Inc., and the Atlantic States Shippers Advisory Board was addressed by Dr. Richard G. Folsom, president of Rensselaer Polytechnic Institute.

—DA—

Piggy-Back Increase Seen

At least 9 per cent of all rail ton-miles will be handled by some form of piggy-back operations by 1965. This is the prediction of John D. Loftis, director of marketing, American Car and Foundry Division, ACF Industries, Inc. Taking part in a seminar on "The Developing Transportation Revolution," Loftis said that "the emphasis will be increasingly on lightweight, high-speed freight trains. The seminar was held by the Railway Systems and Procedures Association of Chicago.

(Resume Reading on Page 13)

... Automation

(Continued from Page 29)

But, after using the system for four years, we found that while we were doing a much better job and doing it in about half the time, we weren't saving any money and had the additional expense of the rental of the equipment. Probably the main reason we couldn't save was because we had to maintain our five branch warehouse offices. Someone had to be there to take care of telephone calls, incoming trucks, issue receipts and orders. So we made records for future use and went back to our old system.

With the ever-increasing spiral of wages, I feel we must, if we're to stay in the public storage or distribution business, find some way of reducing our costs. Properly designed warehouses with automation where practicable and, if not too costly, may be the answer.

Built for Storage

Our buildings were built for storage. They do not readily lend themselves to distribution. Apparently they were built to last forever, and under our government tax formula, we cannot write the cost off in less than 50 to 70 years. We believe new buildings should be so constructed and equipped, if such is possible, so that they can be written off in 15 to 25 years or less.

We believe multi-story buildings can be used to advantage. They will probably not be over four-stories high, with elevators on the outside of the buildings and with wide receiving and delivery platforms. Where rollers and belts are employed, racks seem to be a necessity. We feel part of the building should be so equipped. However, open space should be reserved for bulk handling. Incidentally, multi-story warehouses apparently present no problem in automated operations; inefficiencies of multi-story buildings can be overcome by modern equipment.

There have been a number of installations of automatic conveyors in multi-story warehouses. These units convey the complete pallet
(Please Turn Page)

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so we use Delta Air Freight"



Convair, Ft. Worth, Texas, uses Delta Air Freight to help meet production deadlines and testing schedules for the B-58, America's first supersonic bomber.

"Every minute test planes are grounded, our national defense program is affected," says Sam Keith, Traffic Manager. "Delta Air Freight plays a vital part in the B-58 production and testing program, by reducing the transit time for high-priority material between our Ft. Worth plant and distant test sites."

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Cincinnati • Cleveland • Elkhart • Fort Wayne • Indianapolis
Kansas City • St. Louis • St. Paul • Toledo

... Automation

(Continued from Preceding Page)

load or warehouse truckload so that fork truck operators can remain on their respective floors. Operators' time is not lost waiting for and riding conventional elevators.

In this connection, I quote from a well-known authority: "As to the future, it is possible that changing trends or revolutionary developments will completely alter our concept of a warehouse and distribution center. However, assuming there are no revolutionary changes, it appears likely that we shall see more and more plant and equipment per employe with resultant increases in output per manhour. It is logical to visualize the warehouse of the distant future as either a large, single-story plant or a very special multi-story building. Perhaps we shall see a return to the urban locations in newer type, large floor space multi-story plants, in which each floor shall be a single-story plant in itself complete with all facilities. It's conceivable that cars, trailers and trucks will eventually be equipped with self-unloaders or will carry cargo containers which would discharge cargoes on conveyor aprons and thus move into and throughout the warehouse."

New Devices

Automatic operation uses many devices almost unknown to the average warehouseman. To mention a few, there are computers; electric interlocks; photoelectric cells; code identifiers and counters; solenoid actuated escapements; photoelectric relays and decoders; limit switches; and magnetic drums.

Impulses can be by manual operation of electrical contacts by punched cards, by punched tape, or by magnetic tape.

In most cases, it has been proved that there must be a high volume of movement to justify the automation of a warehouse. The equipment is quite expensive. There must be a definite flow pattern in order to design equipment to accomplish and give the flexibility necessary to provide efficient low cost handling. Generally fast mov-

ing items lend themselves more readily to automation. One-floor plans are usually most suitable and most efficient and will be less expensive so far as initial cost is concerned.

Apparently each installation must be designed for the particular job. Because our need is so uncertain, we have not asked anyone to figure on our possible requirements, and we have been unable to ascertain the cost of the system with which we are conversant.

Some years ago, the Borg-Warner Co. advocated a system which, according to their figures, when operating a warehouse of 100,000 sq ft capacity, housing \$1,000,000 worth of products, could be operated at a saving of \$100,000 per year. I believe the automation equipment would have cost in the neighborhood of \$1,000,000.

Two Installations

Two recent installations of automatic systems handling pallet loads on both vertical and horizontal conveyors, including pallet loaders, conveyors, and automatic electrical interlocks, cost approximately \$1,000,000 each. One was for a sugar concern. The other was for a food processor.

One manufacturer advises he normally figures about \$1200 to \$1500 per storage line. This includes controls and the collecting-belt system at the discharge end of the storage line. This figure does not include any storage system that might be necessary to collect and hold orders prior to truck or rail shipment. Capacity of storage line was not mentioned.

One of the systems presently in use in a processor's food warehouse uses gravity type roller-conveyor storage lines sloping about $\frac{1}{2}$ in. per foot towards their discharge ends. Solenoid actuated escape-ments control the flow of products to transverse belts that converge in a single chain-driven live roller discharge conveyor. At the end, individual products may be palletized and moved to delivery trucks.

Central Control

Operation of the system is controlled by an electro-mechanical computer, actuated from a console. To set up an order, the operator
(Please Turn Page)



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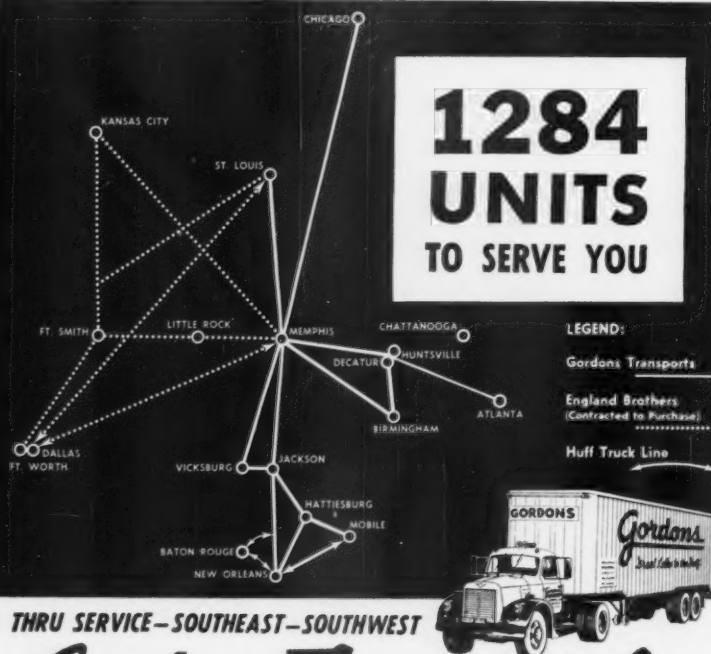
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Gordons Transports, Inc.

... Automation

(Continued from Preceding Page)

throws case count switches for the quantity ordered; then sets the commodity selector switch for the item.

The theoretical output of this system, based on one large order, is 7200 cases per hour. Theoretical minimum based on one case orders, is 240 cases per hour. Orders at this plant average eight cases each. This enables the handling of 1200 cases per hour or approximately 10,000 per eight-hour day. This installation comprises 69 conveyor storage lines arranged three tiers high. Most of the lines being 100 ft long. This provides a total of 5500 ft of mobile storage space sufficient to store 4400 cases.

Floor area required is 5500 sq ft. By extending short lines and adding an identical system above the present one-story, capacity could be increased to 15,000 ft. Each of the three tiers of conveyors discharges to its individual transverse belt. The console contains a vertical bank of quantity selector switches numbered from one to nine. In addition, there is a switch for 10 and one for 20. By combining the digits with the 10 or 20 switches, a case count of from one to 29 may be set up in the circuit.

As to direct savings, let's consider an example: If an average man can fill orders at a normal rate of 150 cases per hour, using motorized tractor and trailer, it would result in an average picking cost of 6 cents per case. This figure includes equipment depreciation, supervision and other overhead.

A system such as described would pay off in about six years if an average of 18 cases per storage line is shipped each day. If the average is 24 cases, it would pay off in four years.

This curve makes allowance for manual loading of the system's conveyors, manual stacking into trucks, equipment write-off (with 6-8 per cent profit on investment), maintenance, supervision, and other overhead expenses. Figures will vary with different warehouse operations. The curve, however, will still give an indication as to

the advisability of investing in such a system.

At an average 25 cases per line per day, a 3½-cent-per-case handling cost can be anticipated. This is based on a 10-year depreciation period and includes all operating and other expenses.

The curve indicates that if a warehouse presently operates at a cost of 6 cents per case, then the mechanical handling of commodities, each ordered out at an average of 10 cases per day, would safely retire the required investment.

Further study usually reveals that the investment for handling all items shipped in quantities of five or more per day can be justified. Slow movers can be handled on short storage lines and operate with control equipment and collecting conveyors already justified by the major portion of the system.

In another system, packages may be received as individual units or in large lots. In the first case, the packages usually arrive in single file on a conveyor line. Large lots are usually received on pallets or in cubes.

The problem of automatic warehousing at this stage is determined by the intended technique of storage. If packages are to be stored as units on live conveyor lines, the individually received ones can be directed both to storage conveyor lines and bulk storage areas. Packages that have been received on pallets and must be separated can be handled by automatic pallet unloaders. These mechanisms dismantle the loads and place the individual packages in a single file on conveyor lines.

If the packages are received in pallet loads and are to be stored

this way, they can be directed to live conveyor lines capable of handling pallet loads. Loaders are available that can palletize items from several production lines.

Automatic equipment presently in use can accumulate as many as 600 cases at a time. This permits the simultaneous loading of two or more trucks. During the loading, medium belts regulate the flow to overhead conveyor belts and a photocell counting mechanism prints the number of cases per each order. Commodity orders ranging

from one to several hundred cases in a wide variety of more than 350 items of stock can be combined and conveyed in proper route delivery sequence to waiting refrigerated trucks.

I think automation is feasible; that is, it's capable of being done in public warehouses. However, I don't think we dare adopt it unless we can get term contracts assuring the almost continuous daily use of the equipment during its write-off period. ●

(Resume Reading on Page 30)

COOPER-JARRETT, inc.

"The TRAFFIC MAN'S Line"

YOUR SHIPMENT IS COVERED! \$1,000,000.00 INSURANCE

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Circle No. 13 on Card, Facing Page 52

58

Temperature . . .

(Continued from Page 31)

given only limited handling instructions. Generally, they were not aware of the entire handling operation. Employees indicated an interest in receiving information regarding perishability of frozen foods and improved methods of handling. In one firm, handling practices had been standardized. As a result, employees had a better understanding of their function in the marketing of the products.

Since temperatures reported for shipments received by rail were for cars which had not made previous stops and those for trucks were obtained from vehicles which may have made previous stops, no comparison can be made of the relative capacity for temperature maintenance.

Above Zero

The study showed, however, that frozen foods were accepted by distributors at temperatures in excess of 0 deg F. Frozen products received at temperatures above 0 were treated as if received at 0 deg. None of the distributors were equipped to provide special handling for products received at temperatures above 0.

Average air and product temperatures measured in warehouse freezers were 0 deg F with the exception of one distributor who had a mechanical failure at the time of the survey.

Methods Varied

Methods of order assembly and loading of delivery vehicles varied widely. During loading operations, product temperatures were observed to vary from no change in one instance to a high of 8 deg in another. Rise of product temperature during loading varied according to the method and speed of transfer from the warehouse to the delivery vehicle. Factors contributing to the 8-deg rise were: assembly of orders on platform, doors of freezer and truck kept opened during the entire loading period, transfer of merchandise by hand from freezer to platform, and merchandise allowed to remain on platform for prolonged

the Sign



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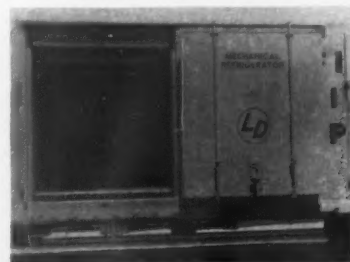
"Everywhere West"

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periods until transferred to delivery truck.

Occasionally, the advantage gained by good handling methods was lost because of failure to pre-cool delivery vehicles adequately

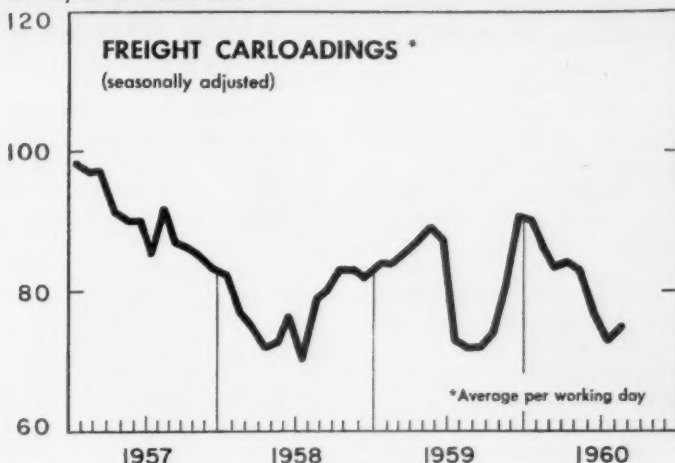
Railcar Door Liners



The first of 1025 railroad cars in which temperature may be controlled have left the assembly line. Temperature control ranges from 10 deg F to 70 deg F. Doors of the cars are lined with plastics developed by Koppers Co., Inc., and Borg-Warner Corp. Inside the doors, 89-lb mouldings of expandable polystyrene form a tight, moisture-proof non-sagging insulation. The door liners are of Cylolac plastic made by vacuum forming. The Pacific Fruit Express cars now can accommodate larger fork trucks

DISTRIBUTION AGE

Index, 1947-49 = 100



or failure to plug in refrigeration units while holding overnight.

Mixed Loads

Trucks carrying mixed loads—frozen foods and groceries—were not compartmented. Hot spots resulted where frozen foods were surrounded by dry goods. Where delivery of mixed loads was practiced, mechanical refrigeration units were not set to maintain 0 deg.

Merchandise delivered in trucks equipped with "hold-over plates" showed considerable temperature variation. This may have resulted from inadequate circulation of cold air due to improper loading, the absence of floor racks, or frost accumulation.

Temperature variations also were found in insulated trucks having no refrigeration or with dry ice. Occasionally, product temperatures at the first delivery were higher than at the last delivery. This probably was due to the insulation effect of surrounding frozen case goods. Merchandise delivered first, however, was protected only by the insulation of the truck, dry ice if used, or blankets.

Average Rise

Average product temperature rise from first to last delivery was about 5 deg F. Certain distributor freezers were maintained at a temperature sufficiently below 0 deg to offset the expected rise in temper-

ature during the delivery period.

The median delivery temperature was 9 deg. A few temperatures were observed about 20 deg. However, the majority were between 0 and 10. The delivery temperature observations were taken during weather conditions varying from a low of 40 to a high of 88 deg. •

(Resume Reading on Page 32)

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23 E. JACKSON BLVD., SUITE 611, CHICAGO 4, ILL.

Produce...

(Continued from Page 35)

retail stores from further damage by consumer handling.

These studies were made over a four-year period. Researchers evaluated grapes prepackaged in eight different types of consumer packages. Fifty-four commercial trial shipments and eight controlled test shipments were made.

Several consumer packages were eliminated because of unfavorable characteristics. Four consumer packages proved to have considerable merit. Of these four, a folding tray overwrapped with film and a film-window carton with a stapled recessed bottom gained most favorable acceptance.

In 1960, one corporate grocery chain reported buying 58 carloads of grapes prepackaged in California. About 90 per cent were packaged in acetate film window cartons with stapled recessed bottoms. The price of this package was recently reduced. This, coupled with

a cheaper master container and increased efficiency of operation has cut the premium differential to 40 cents.

Another late development is the introduction of a plastic basket in which grapes are prepackaged after being overwrapped with film.

Time studies were conducted in four packing sheds. They measured the amount of direct labor required for packing grapes in stapled-bottom cartons, self-locking-bottom cartons, folding trays, and self-locking-end cartons.

About 2 lb of grapes were packed in each consumer package. Twelve consumer packages were packed in each master container. For comparison, studies of the labor requirements for packing 28½ lb in a conventional wood box were made in each of the plants.

The self-locking-bottom and self-locking-end packages were packed on conventional wood box lines. Over-and-under scales with metal package holders attached on top of each scale were the only equipment added in converting from wood boxes to consumer packages.

For packing stapled-bottom pack-

ages, the plants added carton assembling and closing machines, conveyor belts, and scales. The conveyors transported packages to and from the filling stations.

A different line was designed for packing the folding-tray cartons. It required automatic tray setup machines, conveyor belts, scales, automatic film overwrapping machines, an automatic master box filler, and an automatic master box sealer.

Assembling Cartons

The stapled-bottom cartons were assembled on a semiautomatic folding machine by one full-time worker. The self-locking-bottom and self-locking-end cartons were received from the manufacturers pre-assembled and folded flat. Each packer set up the cartons manually before filling them. The folding-tray cartons were set up on an automatic machine attended by a part-time worker.

Basically, the method of filling was the same for all consumer units.

In each of the plants, one work-

TAKE A LOAD... ANY LOAD FROM GROUND



TO CARRIER in seconds

Any load that must be hefted or hauled by *hand* takes time... costs money. Take ground level loading of trucks for example. One company used to do it like this: a power truck and driver to shuttle loads from warehouse to truck; two men to transfer loads from fork truck to carrier, onto hand trucks, wheel them into carrier, unload by hand again. Time 2½ hours; manhours: 7½; costs: *plenty!* Now, with a Magliner Mobile Loading Ramp on the job, the power truck driver does it alone in an hour's time. Savings: *plenty!* For the complete story...



WRITE TODAY FOR BULLETIN DB-211
Magline Inc., P. O. Box 2311
Pinconning, Michigan

MAGNESIUM MOBILE LOADING RAMPS

Circle No. 6 on Card, Facing Page 52, for more information

NOW! A LOW COST dry stylus

PANDUX® RECORDING THERMOMETER

Highly portable field service unit records temperature and time on a replaceable paper chart, in permanent or temporary installations, in any position. May be packed with shipments or encased in polyethylene bag for humid or corrosive atmospheres. No ink to spill, run or freeze. May be sealed to prevent tampering. Only 3-15/16" dia. by 2-7/8", wt. 14 oz.

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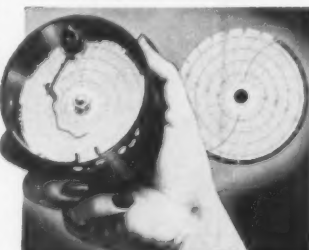
- Perishable goods in transit — land, sea or air — or in storage.
- Refrigerator or freezer storage.
- Low temperature ovens, curing rooms, incubators, greenhouses.
- Offices, factories, assembly halls, hospital rooms and other enclosures.
- Heating and air conditioning systems.

*Also Centigrade equivalents.

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Los Angeles 64, Calif.

Dealer Inquiries Invited... Some Territories Still Open.



MODEL 585

only \$37.50

F.O.B. LOS ANGELES

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DISTRIBUTION AGE

NARROW AISLE ELECTRIC FORK TRUCK



NEW NR-40 reach-type, electric fork truck. Narrow aisle maneuverability. Only 38 inches wide. Capacity 4000 lbs. at 24 inches. Power steering. Single master control handle. Dual drive axles. Tilting forks. Entry upright extends. Full load speed—6 mph. Operates in seven foot aisle.

Industrial Truck Division
CLARK EQUIPMENT CO.
1921 Escote Street
Bottle Creek 77, Michigan



er moved from station to station checking the quality of grapes being packed. The cartons were checkweighed manually by another worker.

The recessed staple-bottom cartons were closed by an automatic stapling machine. One worker fed the cartons into the machine and another supplied the machine with the recessed corrugated fibreboard bottom. The bottoms were fastened to the carton with eight staples.

The self-locking-bottom cartons were closed manually by the carton filler. He bent four interlocking tabs on the sides into the recessed corrugated bottoms. The self-locking-end cartons also were closed manually by bending interlocking tabs located on one end of the carton. The folding trays were closed by passing them through an automatic machine which overwrapped them with semi-moistureproof cellophane or cellulose acetate film. One worker fed the filled trays into the machine. Another attended the machine.

The wood master containers held 12 consumer units. Crates were assembled and closed by semiauto-

matic nailing machines. One worker supplied the shook and a second operated the machine.

Both types of fibreboard masters also held 12 units. The top flaps of the box for the stapled-bottom cartons were stapled together by a semiautomatic stitching machine. The box was filled manually. It was closed manually by gluing the bottom flaps. The master containers for the tray cartons were assembled manually. Filled by an automatic case filler, they were closed by an automatic sealer.

This box for folding trays required the least amount of labor to assemble, fill, and close—.54 man minute.

Freight and refrigeration charges for a standard load of 1040 conventional wood boxes, based on actual weights, were \$922. Shipping the same number of boxes with prepackaged grapes cost between \$870 and \$883.

Transportation costs were lower for fibreboard master boxes than for wood crates. Tare weight of the fibreboard boxes was less. In addition, the fibreboard containers used for the overwrapped folding trays were loaded 1088 per car as compared to 1040 for the other master containers and the wood boxes.

Transportation charges for consumer packages packed in fibreboard shipping containers were four to six cents per container less than the cost of shipping the same packages in wood master containers. Although transportation charges for the standard wood box were the highest, this box carried more grapes. Therefore, the charge per pound actually was fractionally lower.

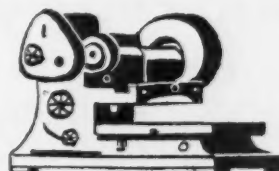
By prepackaging at shipping point the total cost of marketing grapes may be reduced. Labor, space, and other overhead costs usually are lower in growing areas than in terminal markets. Also, assembly-line packaging of large volumes of grapes would be more efficient than the small-volume packaging done at the retail store level.

Complete copies of this report, "Prepackaging California Grapes at Shipping Point," Marketing Research Report No. 410, are available from the Office of Information, USDA, Washington 25, D. C. Single copies are free. ●

(Resume Reading on Page 36)



For shipping beans



or machines

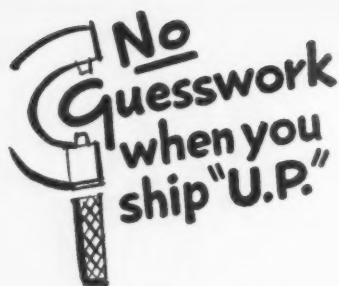


or canned sardines

**The better way
is Santa Fe**

No matter what you ship call the nearest Santa Fe Traffic Office and let the longest railroad in our nation go to work for you.





We keep an electronic eye on your shipments

... can tell you where they are in a matter of minutes.

...

**UNION PACIFIC
RAILROAD**
OMAHA 2, NEBR.

Multi-stop ...

(Continued from Page 37)

demands of low product temperature.

The problem of constant temperature was solved by installing a Sundstrand unit that operates from the truck motor. This unit gives constant refrigeration while traveling. It enables the company to pull the air temperature of the truck down on its return to the warehouse for the next day's deliveries. Trucks that formerly returned with an air temperature of 30-40 deg are now returning with air temperature close to 0 deg.

Plate surface was increased. With two two-horsepower compressors, the carrier was able to divide the plates so that each compressor refrigerates only half the plates. Thus one compressor can be operated during the winter months and half of the plate surface used.

A fan was installed on the rear wall of body just inside the doors. This fan operates when the doors

are closed between stops, thus circulating the hot air to the plates faster. It is protected by being enclosed in a wire box large enough to add a 10-lb piece of dry ice if necessary.

The first trucks had two curtains. One was permanently installed at the door and another could travel on lengthwise rods. These were to be pushed back after each stop, forming a vestibule. They had their disadvantages because of human failure curtains were not closed. In addition they could not be fitted tightly at the top. They were replaced with rubber flapper doors, permanently placed halfway back in truck. Afternoon deliveries were protected from hot air taken in during the morning.

The results of this study follow:

Air temperature of truck 7:00 a.m. was -19. Outside temperature was 72 deg. Outside temperature increased to 88 deg during day. There were 18 stops on truck with a total of 16,000 lb.

The air temperature inside the truck rises on each opening, depending on the length of time of delivery. The highest temperature recorded was 30. Operation of the compressors pulls this down between stops and this differs, depending on length of distance between stops, which varied.

The truck had 245 minutes of opening time. It traveled 246 miles. Product temperature of all 18 cartons was -5. A pierce thermometer was placed in each carton and read on opening of the truck at each stop.

At the first four stops the temperature did not change. At the next six stops the product temperature recorded -4. This brought us up to the flapper door. The next stop showed -5 and each stop thereafter showed a -3 temperature or a loss of two degrees in product temperature.

On return to the warehouse air temperature in the truck was +4 at 5:00 p.m. This truck was hooked up to electric current and pulled off at 9:00 p.m. to be reloaded by the night crew. It takes 40 minutes to load. At 10:00 p.m. it was hooked up again with an air temperature of +30 being recorded. At 7:00 a.m., after nine hours hookup, truck was -18. ●

(Resume Reading on Page 38)



And they'll stay down with Magliner magnesium dock boards on the job! Magliners speed loading, eliminate dock congestion ... get extra work from power trucks and other loading equipment. Magliners are magnesium-light—easy to put down ... easy to move. No heavy lifting ... no injury hazards. Men, loads and equipment move *fast, sure, safe*. Magliners are magnesium-strong, too ... built to take it ... safely handle loads up to 20,000 lbs. Low initial cost. Less maintenance. Dependable long-life service. *Economy and cost-savings* right down the line! Put all these advantages to work for you. Put Magliners on your dock!



Write for Bulletin DB-204
MAGLINE INC., P.O. Box 4611
PINCONNING, MICHIGAN

Canadian Factory: Magline of Canada, Ltd., Renfrew, Ontario
Circle No. 8 on Card, Facing Page 52, for more information

The Problem...

(Continued from Page 45)

11. Total transportation costs are lowered.

12. Insurance costs are reduced.

13. Not to be forgotten is the fact that the consignee has less work in receiving the goods.

Of course, even roses have thorns. And each shipper must weigh all new problems resulting from this type of shipping. For example:

1. Initial investment. Most of these containers are expensive, either on a rental or purchase basis.

2. Depreciation and maintenance charges add new costs.

3. There is a charge for the return of most of these containers.

4. More paperwork is created in keeping account of the containers, such as their location, per diem charges, repair data.

5. Where products still must be packaged for the final consumer's benefit, the added tare of the container will affect overall shipping cost reductions.

6. They take up a lot more space in the shipping room.

Numerically, there seem to be more advantages than disadvantages. But even one of the disadvantages, such as the added investment, can put a damper on management's interest. However, good old Yankee ingenuity—or call it American enterprise—can be counted on when the principles are economically sound and profitable.

(Resume Reading on Page 46)

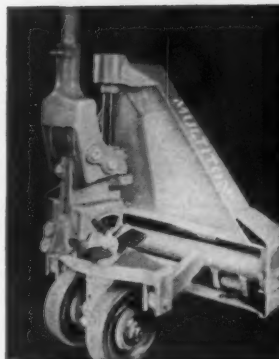
Silent Food Train



A new concept in state-supported schools for mentally-handicapped children requires a low distraction level. Cushman Electric Trucksters were chosen for use at the Arkansas Children's Colony in Little Rock. The train brings meals from a centralized kitchen to eight cottages where 256 children live.

MULTITON gives you
PALLET TRUCK

SUPERIOR QUALITY

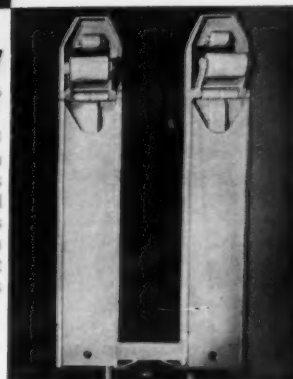


UP FRONT

- Patented leakproof hydraulics with overload and overflow valves
- Hard-chrome plated pistons in honed cylinders
- Precision-machined oil lines—no pipes, no tubings, no packings
- Magnetic oil filter

DOWN UNDER

- Box-section type push rods
 - Taper roller bearings on load rollers
- Torsion-proof hardened joints
 - Effortless operation through pallet entry & exit rollers



OVER-ALL

- Hand-operated 7¾" lift in only 3 strokes
- Constant lowering speed regardless of load
- All valves easily accessible from outside
- Fully enclosed forks give maximum clearance

Full 6 months warranty

MULTITON FULLY
HYDRAULIC
PALLET TRUCK



Capacities: 2200, 3500, 4400 lbs.
Skid adaptors and/or brake optional. Available in all standard fork lengths with full variety of wheels to fit every requirement. Write for full information.

STOKVIS MULTITON CORP.

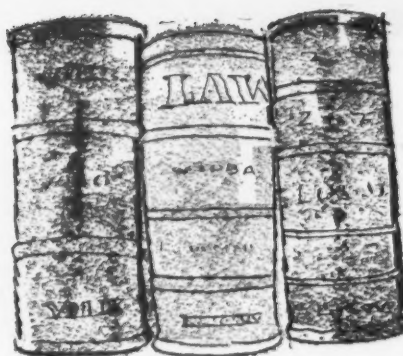
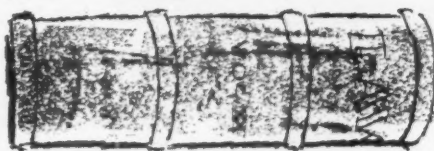
18 SECATOAG AVE., DEPT. D PORT WASHINGTON, NEW YORK

IN CANADA: GRISWOLD ENGINEERING LTD. MONTREAL AND TORONTO

Circle No. 9 on Card, Facing Page 52, for more information

within the Law

By Leo T. Parker
Legal Consultant,
Distribution Age



TRANSPORTATION

Has the term public utility ever been defined in clear and unequivocal terms?

Considerable discussion has arisen from time to time over the legal question: What is a lawful and authoritative public utility?

The transportation of goods by motor vehicle is a business which has been held by the courts to be so related to the public interest and welfare as to require special regulation and control.

Although there have been many opinions written concerning the subject of public utilities, few courts have sought to define a public utility in clear and unequivocal terms. Each declaration of a certain business as being a public utility has depended on the facts peculiar to the situation of that business.

In the leading case of *S— O— P— Co. v. P— U— C—*, 143 N. E. 700, 34 A.L.R. 171, the court said:

"To constitute a 'public utility,' the devotion to public use must be of such character that the product and service is available to the public generally and indiscriminately, or there must be the acceptance by the utility of public franchises or calling to its aid the police power of the state."

Other courts have held that, as its name indicates, the term, "public service" implies a public use and service to the public. The principal determinative characteristic of a public utility is that of service or readiness to serve the general public which has a legal right to demand and receive the utility's services.

For comparison, in *I— Co. v. P— U— C—*, 21 N. E. (2d) 166. This court held that a public utility is bound to serve to the extent of its capacity those of the public who need the service and are within the field of its operations, at reasonable rates and without discrimination.

For further comparison, in *W—*

v. P— S— C—, 81 S. E. 734, L.R.A. 1918A, 210. This higher court explained that a "public utility" is a business organization which regularly supplies the public with some commodity or service. While the term has not been exactly defined, and, it would be difficult to construct a definition that would fit every conceivable case, the distinguishing characteristic of a public utility is the devotion of private property by the owner or person in control thereof to such a use that the public generally has the right to demand service, as long as it is continued, and that such service shall be conducted with reasonable efficiency.

Can city ordinances discriminate between various owners of motor trucks?

No. A court recently held invalid a city ordinance which is discriminatory, as between various owners of motor trucks.

For illustration, See *R— Corp. v. City of R—*, 142 N. E. (2d) 525. Testimony showed that the city

passed an ordinance which broadly prohibited operation on the city streets of motor trucks containing a gross weight in excess of 20,000 lb. The ordinance was not applicable to vehicles operated on State highways. In addition, it was not applicable to motor trucks making deliveries to purchasers of merchandise located anywhere in the city.

The higher court promptly held the ordinance void. It violated the equal protection clause of the 14th Amendment of the Constitution. The court said:

"The ordinance is illegal in that it imposes restrictions and penalties on those using the streets engaged in through traffic and imposes no such regulations upon those using the streets for other than through traffic, notwithstanding such traffic imposes the same stress upon the streets and creates the same hazard."

What rules are established when a railroad corporation desires to abandon its line?

A Federal court recently established important rules and regulations adaptable when a railroad desires to abandon its line.

For example, in *S— B— Inc. v. J— S— C— R.R.*, 259 Fed. (2d) 532, a higher Federal court clearly held that if a railroad corporation desires to abandon its line, within *I— C— C—* jurisdiction, it must first procure the necessary certificate from the Commission. It cannot refuse to do so on ground that the corporation did not have funds to continue operation, where no petition of bankruptcy has been filed. This court also held, that until the railroad had sought such relief and it was denied, the hardships imposed by an injunction forbidding abandonment did not outweigh the purpose of the Interstate Commerce Act to prohibit abandonment of railway service without approval of the *I— C— C—*.



"We're going to trade it in as soon as our rate increase comes through."

SBA to Hold Hearings on Loans to Household Goods Movers Nov. 2

The Small Business Administration will hold a hearing this month to redefine the term business in relation to household goods movers. The new definition will aid the government and SBA in procurement and the awarding of business loans.

The Nov. 2 hearing will be held at 10 a.m. Eastern Standard Time in Room 1143, 811 Vermont Ave., Washington, D. C. Interested persons who wish to make an oral statement at the hearing should notify the director in writing giving the name and title of the person who will appear and whom he will represent.

Such information should be addressed to Samuel S. Solomon, director, Office of Small Business Size Standards, Small Business Administration, Washington 25, D. C.

—DA—

NARW Gets Set for Convention

Milliard W. Young was recently named chairman of the Convention Hospitality Committee for the National Association of Refrigerated Warehouses' Annual Convention set for March 27-30, 1961, in San Francisco. Young is president of National Ice and Cold Storage Co. of California.

A Convention Business Sessions Planning Committee also has been set up with A. R. Carstensen, Glenn F. Dodson, C. A. Martin, Jr., and F. D. Newell, Jr., as members.

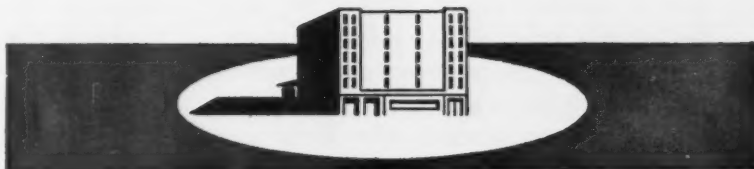
—DA—

Tariff Supplements Show Higher Labor Charges in San Francisco

Two new tariff supplements have been placed into effect. They concern Tariffs No. 78-B and No. 77-A. Both have item revisions reflecting increased charges for application in the San Francisco Bay area.

The tariffs have new items which provide for a \$10 charge when the carrier, at the request of the shipper, determines and reports as to the amount of the claim in excess of the carrier bill of lading liability. Section IV of both tariffs reflects a higher packing rate in the San Francisco Bay area; Harrisburg, Pa.; and Rhode Island.

Warehouse SPOTLIGHT



SEWMA Hears Speaker on 'Right to Work;' Weil Re-elected President of Organization

The 16th Annual Meeting of the Southeastern Warehousemen and Movers' Association provided a stimulating, multi-phase program at the Baringer Hotel, Charlotte, N. C., Sept. 15 through 17.

General sessions were held in the mornings, and separate Household Goods and General Merchandise meetings in the afternoons. Six speakers were featured on the program, which included six panel discussions and a number of committee reports two of which concerned special surveys.

In addition, a special luncheon honoring past presidents featured W. T. Harrison, president, National Right to Work Committee. He pointed out that union leaders acquired their power by gradual changes in local constitutions. The Taft-Hartley Act, he stated, permits the Right to Work Law. Speaking as an ex-president of a union, he declared that "We've got to give the right of choice back to the worker."

Remarks of the other principal speakers will be supplied in the next issue.

President Jay Weil, Jr. was re-elected. The next annual meeting will be held in Tampa, Fla.

—DA—

Men in the Spotlight

Carroll D. Hurley—named vice-president-director of sales and agent operations, Global Van Lines, Los Angeles; Theodore Sofia, Jr.—elected a director. He is secretary of Sofia Brothers, Inc., New York.

Thomas Murphy — appointed vice president-sales, Louderback - North American Van Lines, Philadelphia.



Wilbur K. Baker—appointed manager-agency training, North American Van Lines Inc.

Merlin Trehus — new manager Bekins Van and Storage Co's. Oklahoma office.

William O'Dea—now in charge of new Los Angeles office, St. Louis Terminal Field Warehouse Co.

R. G. Tomlinson — appointed vice president and assistant general manager, General Transfer and Storage, Inc., Oklahoma City, Okla.



Harrison J. Luhn—retires as vice president of Gulf Atlantic Warehouse Co., after 50 years of activity near the Port of Houston.

David W. Lewis named vice president - sales, Sofia Brothers, Inc., New York.

Warehouse Briefs

The initial grant from the truck trailer industry supporting the Moving and Storage Technical Foundation was made by Dorsey Trailers recently.

Moving and storage services rendered by Weissberger Moving and Storage Co., Inc., New York, can now be charged through Hilton Carte Blanche.

Warehouse Directory

Listed below are approximately 300 public warehouses whose services are advertised in this issue of DISTRIBUTION AGE. The listing is alphabetical by city and state. Included are general merchandise warehouses, refrigerated warehouses, and household goods warehouses. Also listed are a number of national warehouse sales organizations.

Additional information on the services and facilities of particular warehouses shown in the listing can be obtained by turning to the advertisements on the following pages. Generally the advertisements appear in the same geographical, alphabetical sequence as the listings below. Still more information can be had by writing directly to the warehouse.

ALABAMA
Birmingham
 Doc's Tfr. & Warehouse, Inc.
 Harris Warehouse Co.
 Southern Bonded Warehouse
 Strickland Tfr. & Whse. Co.
ARIZONA
Phoenix
 B-Z-Bee Transp'n & Whse. Co.
 Lightning Mvg. & Whse.
ARKANSAS
Little Rock
 Terminal Warehouse Co.
CALIFORNIA
Los Angeles
 Bekins Warehousing Corp.
 California Cartage Warehouse
 Central Term. Whse. Co.
 Davies Warehouse Co.
 Overland Term. Warehouse Co.
 Pacific Coast Term. Whse. Co.
 Pacific Commercial Whse., Inc.
 Star Truck & Whse. Co.
 Union Terminal Warehouse
San Francisco
 San Francisco Whse. Co.
COLORADO
Colorado Springs
 Welcker Tfr. & Stge. Co.
Denver
 Larsen Tfr. & Stge. Co.
 North Denver Tfr. & Stge.
 Welcker Tfr. & Stge. Co.
Pueblo
 Welcker Tfr. & Stge. Co.
CONNECTICUT
Bridgeport
 William B. Meyer, Inc.
Hartford
 George E. Dewey & Co.
 Hartford Despatch & Whse.
 Co., Inc.
DELAWARE
Dover
 Delmarva Whses., Inc.
DISTRICT OF COLUMBIA
Washington
 Davidson Tfr. & Storage Co.
 Kane Warehouse Company
 Terminal Stge. Co. of Wash.
FLORIDA
Jacksonville
 Jacksonville Warehouse Co.
 Laney & Duke Stge. Whse. Co., Inc.
 M & M Term'l. Whse. Company
 D. H. Overmyer Whse. Co.
 Peninsular Whse. Company
 Union Terminal Whse. Co.
Miami
 Colonial Warehouse, Inc.
 International Bonded Whse. Corp.
 Miami International Whse. Co.
 Santini Bros., Inc.
Tampa
 D. H. Overmyer Whse. Co.
GEORGIA
Atlanta
 American Bonded Whse.
 D. H. Overmyer Whse. Co.
 Southern Bonded Warehouse
Savannah
 Savannah Bonded Whse. & Tfr. Co.

HAWAII
Honolulu
 H C & D Mvg. & Stge.
ILLINOIS
Cairo
 Hudson Warehouses
Chicago
 Ace Warehousing Service
 Affiliated Whse. Companies
 American Chain of Whses., Inc.
 Anchor Storage Co.
 Associated Warehouses, Inc.
 Crooks Terminal Whses., Inc.
 Currier-Lee Whses., Inc.
 Equipment Storage Corp.
 Griswold & Bateman Whse. Co.
 Grove Storage Co., Inc.
 Joyce Bros. Stge. & Van Co.
 Majestic Whses., Inc.
 Midland Warehouses Inc.
 North Pier Terminal
 Packers Term'l. & Whse. Corp.
 Producers Warehouse Co.
 Riverside Warehouse
 Soo Terminal Whse.
 Sykes Terminal Whse. Co.
 Thomson Terminals, Inc.
 Wakem & McLaughlin, Inc.
 Western Warehousing Co.
Chicago Heights
 United Warehousing Co.
East St. Louis
 McMahon Transfer & Whse. Co.
 G. J. Noonney & Co.
Joliet
 Joliet Whse. & Tfr. Co.
Kankakee
 Belt Route Whse. Stge. Co.
Vandalia
 Vandalla Whse. Corp.
INDIANA
Elkhart
 Schult General Warehouse
Evansville
 Ingle Street Warehouse Co.
 Mead Johnson Terminal Corp.
 Producer's, Inc.
 Terminal Warehouse, Inc.
Fort Wayne
 Edgar's Warehouses
 Fort Wayne Storage Co., Inc.
 Pettit Whses., Inc.
Hammond
 Great Lakes Whse. Corp.
 Illiana Storage Co., Inc.
 Nowak Warehouses, Inc.
Indianapolis
 Indiana Term'l. & Refrig. Co.
 Indianapolis Whse. & Stge. Co., Inc.
 Merchandise Whse. Co., Inc.
 Strohm Whse. & Cartage Co.
Jeffersonville
 Jeffersonville Div. of Louisville
 Public Whse. Co.
Muncie
 Oren-Shively Whses.

IOWA
Cedar Rapids
 American Tfr. & Stge. Co.
 Cedar Rapids Tfr. & Stge. Co.
Davenport
 Roederer Transfer & Storage Co.
Dubuque
 Dubuque Stge. & Tfr. Co.
KANSAS
Hutchinson
 Hutchinson Merchandise Whse., Inc.
Kansas City
 G-K Warehouses, Inc.
KENTUCKY
Louisville
 Louisville Public Whse. Co.
Winchester
 Winn Avenue Whses., Inc.
LOUISIANA
New Orleans
 H. G. Bauer Mvg. & Stge.
 Commercial Term'l Whse., Inc.
 Gulf Shipside Storage Corp.
 Hayes Drayage & Storage, Inc.
 Maloney Tking. & Storage, Inc.
 Standard Warehouse Co., Inc.
MARYLAND
Baltimore
 Camden Warehouses
 Davidson Transfer & Stge. Co.
 Rowley Whsing. & Distributing, Inc.
 Western Maryland Whse. Co.
MASSACHUSETTS
Boston
 Charles River Stores operated by Merchants Whse. Co.
 Commodify Warehouse Corp.
 Hoosac Storage & Whse. Co.
 National Dock & Stge. Whse. Co.
 Standard Storage Co.
 Wiggins Terminals, Inc.
Lowell
 Curran-Morton of Lowell, Inc.
Springfield
 Pioneer Valley Refrig. Whse., Inc.
MICHIGAN
Detroit
 Central Detroit Whse. Co.
 Detroit Harbor Term'l's, Inc.
 Edgar's Warehouses
 Fleetwing Terminal Corp.
 Grand Trunk Whse. & C. S. Co.
 John F. Ivory Storage Co., Inc.
 Jefferson Terminal Whse.
 Lakeshore Warehouse Inc.
 United States Cold Stge. Corp.
MINNESOTA
Minneapolis
 Brokers Warehouse, Inc.
 Minneapolis Terminal Whse. Co.
 Murphy Warehouse Co.
 Security Warehouse Co.
St. Paul
 Central Warehouse Co.
 Midway Term'l Whse. Co.

Murphy Warehouse Co.
St. Paul Term'l Whse. Co.
MISSOURI
Kansas City
 Adams Tfr. & Storage Co.
 Belger Warehouse Co.
 Central Storage Co.
 Crooks Terminal Whses., Inc.
 Fairfax Storage Co.
 G-K Whses., Inc.
 Jacobs Warehouse Co., Inc.
 Kansas City Term'l Whse. Co.
 Midwest Terminal Whse. Co.
St. Louis
 Keystone Warehousing Co.
 S. N. Long Warehouse
 Madison St. Term'l Whse. Corp.
 Rutger St. Whse., Inc.
 St. Louis Terminal Whse. Co.
 Warehousing Corp. of Mo., Inc.
Springfield
 General Warehouse Corp.
NEBRASKA
Lincoln
 Sullivan Tfr. & Stge. Co.
Omaha
 Ford Stge. & Mvg. Co.
 Gordon Stge. Whses., Inc.
 Omaha Central Whse. Co.
NEVADA
Elko
 Nevada Freeport Storage Co.
NEW HAMPSHIRE
Manchester
 McLane & Taylor Corp.
NEW JERSEY
Bayonne
 Lehigh Tank Terminal
 Wheeling Transportation, Inc.
Camden
 Camden Marine Terminals
 Eavenson & Levering Div. of Mack Whse. Corp.
Elizabeth
 Wheeling Transportation, Inc.
Hillside
 Wheeling Transportation, Inc.
Jersey City
 Lackawanna Whse. Co., Inc.
Newark
 Federal Stge. Whses.
 Lehigh Whse. & Trans. Co.
Paterson
 Commercial Warehouses
Port Newark
 Wheeling Transportation, Inc.
Trenton
 Anchor Warehouse Co.
 Delaware Valley Whse. Co.
NEW YORK
Brooklyn
 Dock Whsing. & Bottling Center, Inc.
 Empire State Whses. Co.

Buffalo
American Household Stge. Co.
Buffalo Merchandise Whses., Inc.
Keystone Warehouse Co.
Knowlton Warehouse, Inc.
Lederer Terminals
Lederer Warehouse, Inc.
Deer Park, L. I.
Pinter Warehouse, Inc.
Horseheads
Lehigh-Horseheads Whse. Corp.
New York City
Affiliated Whse. Companies
American Chain of Whses., Inc.
Bowling Green Stge. & Van Co.
Chelsea Fireproof Stge. Whses.
Santini Brothers, Inc.
Rochester
Geo. M. Clancy Carting Co., Inc.
Syracuse
Great Northern Whses., Inc.
Kling Storage Whse., Inc.
Paul-Jeffrey Company
Syracuse Furniture Fwdg. Co., Inc.
White Plains
J. H. Evans & Sons, Inc.
NORTH CAROLINA
Charlotte
American Stge. & Whse. Co., Inc.
Dixie Cartage & Whsing. Co.
Raleigh
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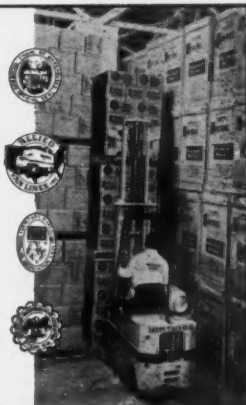
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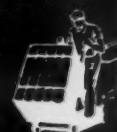
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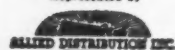
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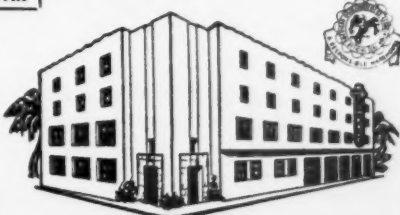
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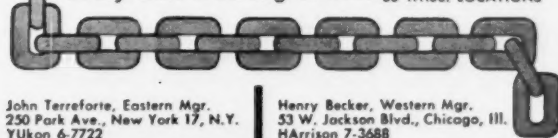
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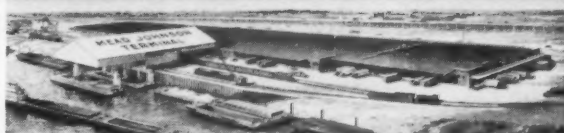
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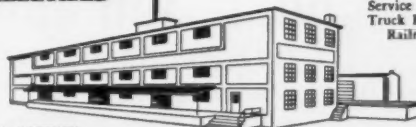
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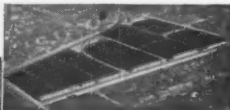
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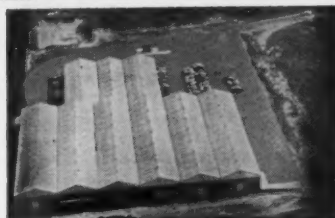
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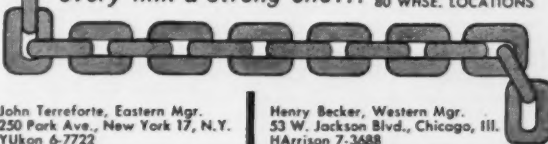
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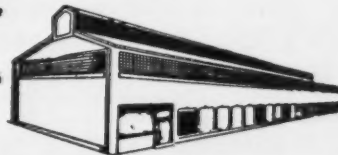
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This modern one-story property with high ceilings and unlimited floor load capacity is fully equipped with modern materials handling apparatus.

HOUSTON CENTRAL WAREHOUSE AND COLD STORAGE CO.

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WAbash 2-3567 Penn. 6-0867

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Houston Terminal Warehouse & Cold Storage Company

701 No. SAN JACINTO ST., HOUSTON 2

General Storage Cold Storage U. S. Customs Bonded
A. D. T. Service Pool Car Distribution
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Lowest Insurance Rate

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Houston
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HOUSTON Warehouse Service
INCORPORATED
905 Live Oak Street
And For Pool Car Distribution
HOUSTON Freight Service
INCORPORATED
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MERCHANDISE DISTRIBUTION

Commercial Storage

BONDED

Office Space — Parking Space

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32 Years Warehousing Experience

HOUSTON, TEXAS

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Owner & Manager

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Private Rail Sidings — All Houston Railroads
General Merchandise — Storage and Distribution
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A FISHER G. DORSEY INTEREST

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Phone: CA 7-2381 TWX-HQ 671

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*We don't want ALL the carload distribution
JUST YOUR'S*

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Your Gateway West

**Warehouse
Distribute
Transload
with
REDMAN**



1. Fully trained personnel
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7. Members AWA, NFWA, Utah Warehousemen's Association, Utah Motor Transport Association
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- Fireproof Concrete Buildings
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- Palletized and Mechanized
- Pool Car Distribution
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- Free Switching—All Railroads
- Customs Bonded Space
- Low Insurance—17½¢ to 35¢
- Deepwater Pier
- Teletype Service
- Mechanical Inventory Control

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Norfolk 1, Virginia

Represented by American Chain of Warehouses, Inc.

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YUkon 6-7722

In Chicago—call
Henry H. Becker
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Fine Warehousing Since 1911

Security Storage and Van Co.

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COLLECTIONS • POOL CARS • DISTRIBUTION
MOTOR VAN AND LIFT VAN SERVICE
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LOCATED
WAREHOUSES**
WITH COMPLETE
WAREHOUSING,
DISTRIBUTION AND
TRUCKING SERVICE

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WAREHOUSES, Inc.**
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Represented Nationally by
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Represented by Associated Warehouses, Inc., N. Y. & Chicago



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ESTABLISHED 1903

LEIGHT TRANSFER & STORAGE CO.

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Merchandise Storage
Pool Car Distribution
Transit Storage
Household Goods Storage
Heated—Unheated—Yard
Storage
Waterfront Facilities
Stevedore Services

U. S. Customs, State and
Public Bonded
70 Car Track Capacity
Modern Handling Equip-
ment
Private Siding on C&NW
CMS&P, G&W Lines
Reciprocal Switching all
lines

Complete local and over-the-road truck services
with 70 units of all types of equipment, including
low-bed trailers, winches and cranes.

AERO-MAYFLOWER MOVING AND STORAGE

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HANSEN STORAGE

OF MADISON, INC.

MODERN ONE STORY OPERATION

MILWAUKEE, WIS.

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General Office—525 E. Chicago St.

3 Clean Well-Equipped Warehouses
Pool Car/Truck Distribution Specialists

Customer Preference—Our Best Reference
Private Siding: C & NW Ry.
3rd Ward Dist.



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MILWAUKEE, WIS.

WISCONSIN'S
LARGEST AND
MOST MODERN

AFFILIATE — HANSEN STORAGE OF MADISON INC.

National Warehouse Corp.

MILWAUKEE'S FINEST



A SOLID BLOCK OF
RESPONSIBLE WAREHOUSING

ALSO LEASE RENTALS OF
WHOLE BLDGS. OR PARTS
SO. WATER & E. BRUCE STREETS



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—Phone BRoadway 1-7091

TERMINAL STORAGE CO.

100-112 W. Seeboth St.
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Cooler, Freezer and General Merchandising Storage
Deep Water Dock Private Siding
on C.M. & ST.P. & P.R.R.

TORONTO, ONT.

Established 1913

TORONTO'S LARGEST

Merchandise Storage and Distribution Specialists



HOWELL WAREHOUSES LIMITED

Head Office: 156 FRONT ST. WEST, TORONTO, CANADA

Telephone: EMpire 4-0111

Member of Canadian Warehousemen's Association
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TORONTO, ONTARIO TERMINAL WAREHOUSES LIMITED

1,000,000 Square Feet
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Cartage
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Office Space
Stevedoring
Rail Sidings
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Lowest Insurance
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TORONTO STORAGE CO. LIMITED

(Established 1916)

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General Merchandise—Bonded & Free

1,500,000 cubic feet. Sprinklered.

Private Siding. Efficient Loading Facilities

Company Owned Trucks.

Members of Canadian Warehousemen's Association.

"Our Clients do the selling—we do the rest."

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ST. LAWRENCE WAREHOUSE INC.

1-VAN HORNE AVENUE, MONTREAL, CANADA

200,000 SQ. FT. OF MODERN FIREPROOF SPACE LOCATED

IN THE EXACT CENTER OF THE CITY OF MONTREAL

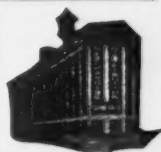
Canadian Customs Bonded. Private Siding — 8 Car

Capacity — Free Switching — All Railroad Connections

Represented by

ALLIED DISTRIBUTION, INC.

CHICAGO, ILL. NEW YORK, N. Y.



Washington DA . . .

(Continued from Page 25)

STUDY FRUIT DISTRIBUTION—Agriculture Department researchers have come up with a new "airflow" pattern of loading trucks with 4/5-bushel fiberboard boxes of citrus fruits. They claim the system keeps the load about 10 degrees cooler than old methods without sacrificing capacity. Detailed drawings are available from the Department's Marketing Service, Washington 25, D. C.

HIGHER FREIGHT RATES — Another round of higher freight rates is almost a certainty. Both rail and truck boosts are being proposed. Railroads propose to raise shipping costs by about 1 per cent by increasing a wide variety of charges by specific dollar amounts. Higher rates were set to go into effect Oct. 24. The ICC set a suspension hearing Oct. 18. Southern and Midwestern truckers are seeking a 5 per cent freight rate boost on interterritorial traffic.

WOULD BARE SECRETS — Confidential company reports to the U. S. Census Bureau will be used in antitrust prosecution cases if the Federal Trade Commission has its way. The FTC is asking the U. S. Supreme Court for the right to use information on the census forms against the firms which file them. Census Bureau officials and the powerful Budget Bureau are fighting the move.

WAGES UP AGAIN — Majority of union contract wage settlements in the first quarter of this year raised workers wages an average of 10 cents an hour. The U. S. Labor Department reports more than half of the period won this wage boost. Some 15 per cent won boosts of 17 cents and more, and 17 per cent got hikes of between seven and nine cents an hour.

LOANS LOOSEN—Business loans should be a little easier to get in the months ahead. In four actions designed to stimulate the economy, the Federal Reserve Board has made available reserve cash which could mean as much as \$3 billion in added loan potential for all kinds of banks. It may bring lower interest rates.

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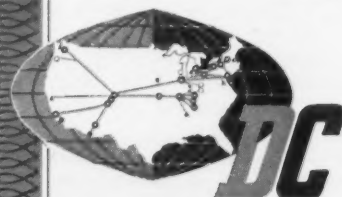
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nearest you for
dependable
responsible service!

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Denver, Colorado	DU 8-4567
Detroit, Michigan	VI 3-9505
Evansville, Indiana	HA 3-6487
Kansas City, Missouri	HU 3-9343
Los Angeles, California	AN 8-8211
Louisville, Kentucky	ME 6-1361
New York, New York	LO 4-3320
North Bergen, New Jersey	UN 3-0900
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Phoenix, Arizona	AL 8-5321
Pueblo, Colorado	LI 3-4425
St. Louis, Missouri	CH 1-7830
Seattle, Washington	MA 4-3850
Syracuse, New York	HA 2-5177

OFFLINE SALES OFFICES

Boston, Massachusetts	NO 7-3401
(Norwood, Mass.)	
Cincinnati, Ohio	HU 1-8165
Dayton, Ohio	BA 2-5082
Milwaukee, Wisconsin	DI 2-4110
Nashville, Tennessee	AL 5-3528
New York, New York	WI 7-6968
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(Springfield, Pa.)	
Portland, Oregon	CA 2-4500
Rochester, New York	OL 4-8680
San Francisco, California	UN 1-4331
South Bend, Indiana	CE 4-1393
Washington, D. C.	TA 9-4040



DENVER CHICAGO
TRUCKING CO., INC.
The ONLY direct coast-to-coast carrier!

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*Traffic Managers
tell us:*

Financial Responsibility

*is essential in
selecting a carrier*



CHICAGO TRUCKING CO., INC.
...the ONLY direct coast-to-coast carrier

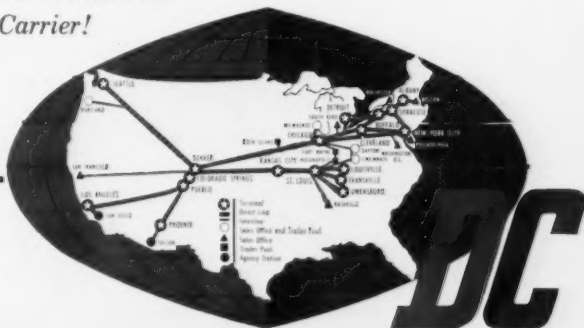
Our steady growth reflects the confidence our customers have in **DC**

D-C has been serving its customers for almost 30 years . . . for the past 12 as the only coast-to-coast carrier. Our growth, year after year, reflects their confidence in us. It means that you, too, can specify D-C with the complete assurance that

you're dealing with a financially-sound carrier . . . that your shipment, large or small, will get the care it deserves, backed by our full resources of men, equipment and facilities and the know-how that comes from long years of experience.

*For the fastest and finest in truck service nationwide
... always ship D-C, the Dependable Carrier!*

DENVER CHICAGO TRUCKING CO., INC.
the ONLY direct coast-to-coast carrier!





EASE THE PROFIT SQUEEZE WITH AN AUTOMATIC[®] GAS LIFT TRUCK

A truck that's down for repairs costs plenty. So does one that gulps fuel. AUTOMATIC's answer: a truck with no clutch to shift or wear out, no complicated torque converter to breakdown... a truck that saves you up to 30% on fuel... and yet costs no more to buy.

With as many as 200 fewer wearing parts compared to conventional power shift units, the danger of unexpected downtime is practically eliminated. So is the cost of complex and frequent repairs. An AUTOMATIC gas truck means less maintenance... easier maintenance.

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Check initial cost. AUTOMATIC's gas lift truck is priced competitively to all other trucks of the same capacity equipped with automatic transmission.

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Division of The Yale & Towne Manufacturing Company

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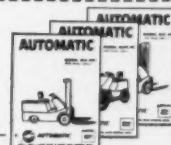
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Name

Firm

Address

City Zone State



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